U.S. Department of the Interior
Bureau of Land Management

December 2025

Utah State Office
440 West 200 South, Suite 500
Salt Lake City, Utah 84101-1345

Greater Sage-Grouse Rangewide Planning

Record of Decision and Approved Resource Management Plan Amendment for Utah

Appendix 1

Table and Maps

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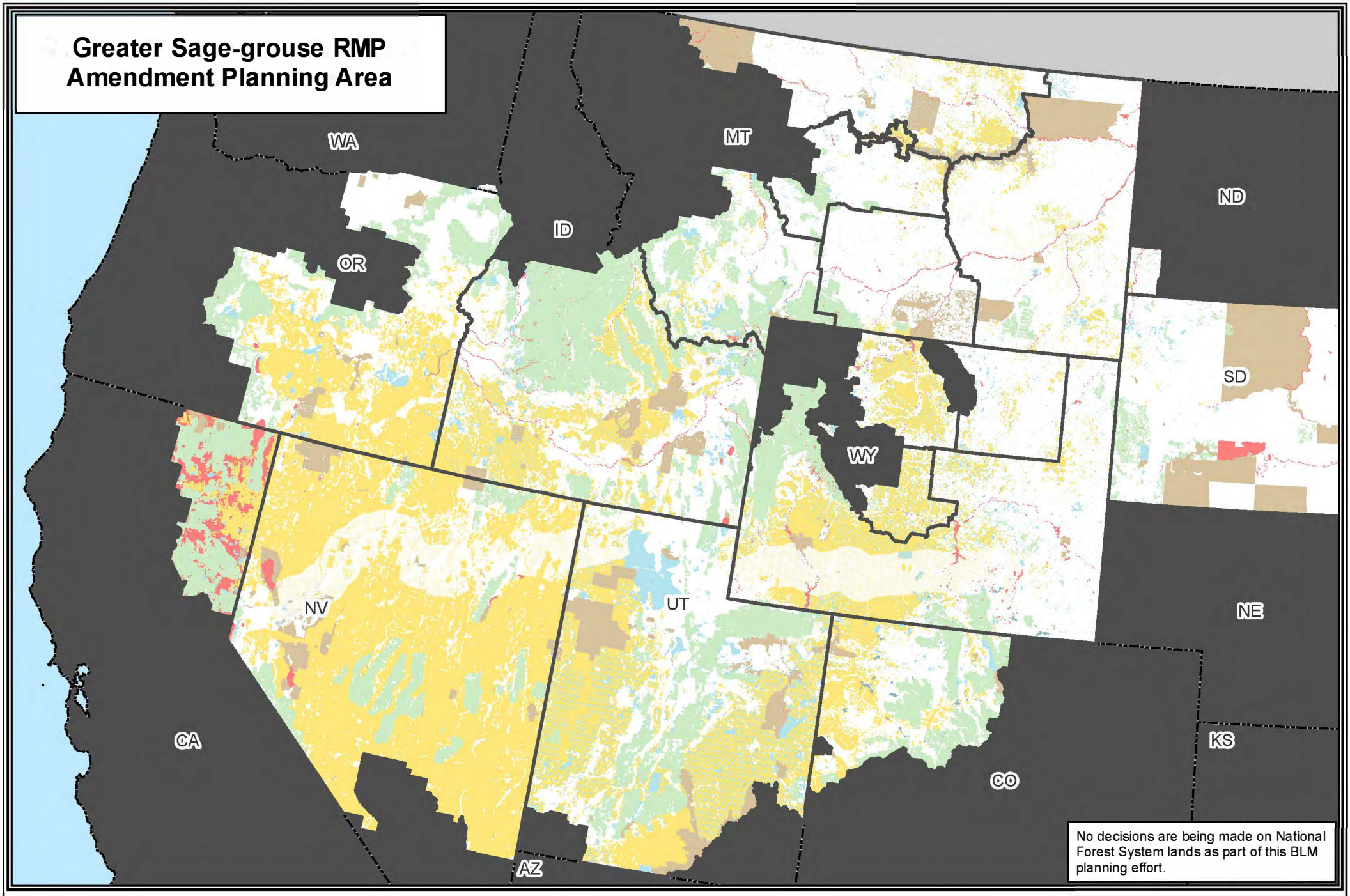
Appendix 1. Table and Maps

1.1 TABLE

TABLE 1. HABITAT MANAGEMENT AREA ACREAGE. Acreage estimates include total acres irrespective of ownership (Total), BLM administered surface acres (BLM Surface), and BLM administered subsurface acres where the subsurface acreage is overlaid by non-BLM surface (BLM Split-estate) calculated in International Acres (rounded to nearest whole) in projection USA Contiguous Albers Equal Area Conic.

Habitat Management Area	Total	BLM Surface	BLM Split-estate
Priority Habitat Management Area (PHMA)	5,414,822	1,853,744	442,117
General Habitat Management Area (GHMA)	1,662,235	827,484	115,265
Total	7,077,057	2,681,228	557,382

Greater Sage-grouse RMP Amendment Planning Area



No decisions are being made on National Forest System lands as part of this BLM planning effort.

Map 1

Legend

- Planning Area Extent
- State Boundaries
- Bureau of Land Management
- US Forest Service
- Other Federal Lands
- State
- Private
- Local Government
- Other / Unknown

N W E S

0 25 50 100 Miles

No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

Map 2. Utah Planning Area and Decision Area

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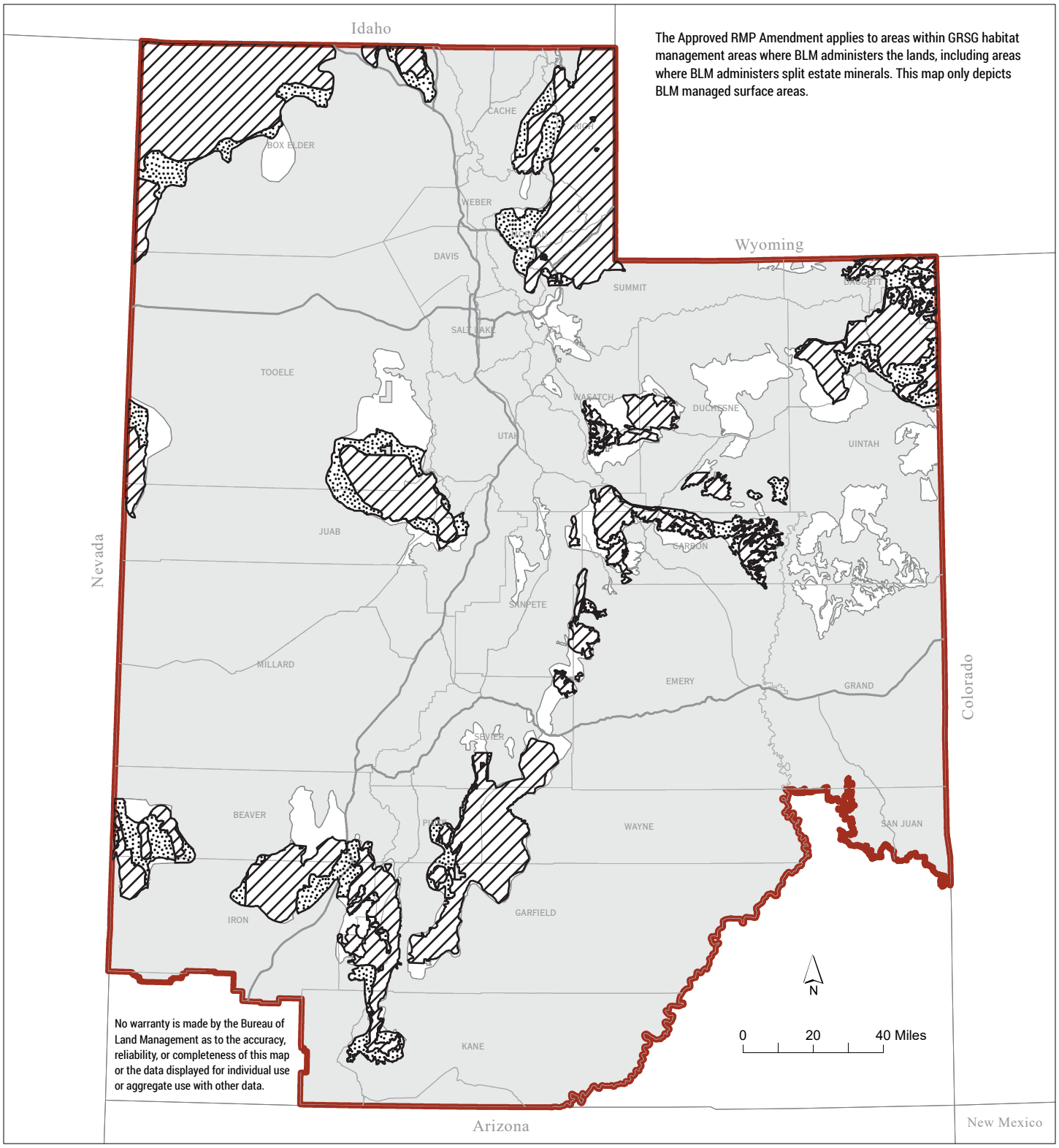
2025 Utah Greater Sage-grouse Record of Decision



The Approved RMP Amendment applies to areas within GRSG habitat management areas where BLM administers the lands, including areas where BLM administers split estate minerals. This map only depicts BLM managed surface areas.

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this map or the data displayed for individual use or aggregate use with other data.

Planning Area Boundary

PHMA

GHMA

Decision Area

Planning Area Outside of Decision Area

Map 3. Utah GRSG Habitat Management Areas (Across All Jurisdictions)

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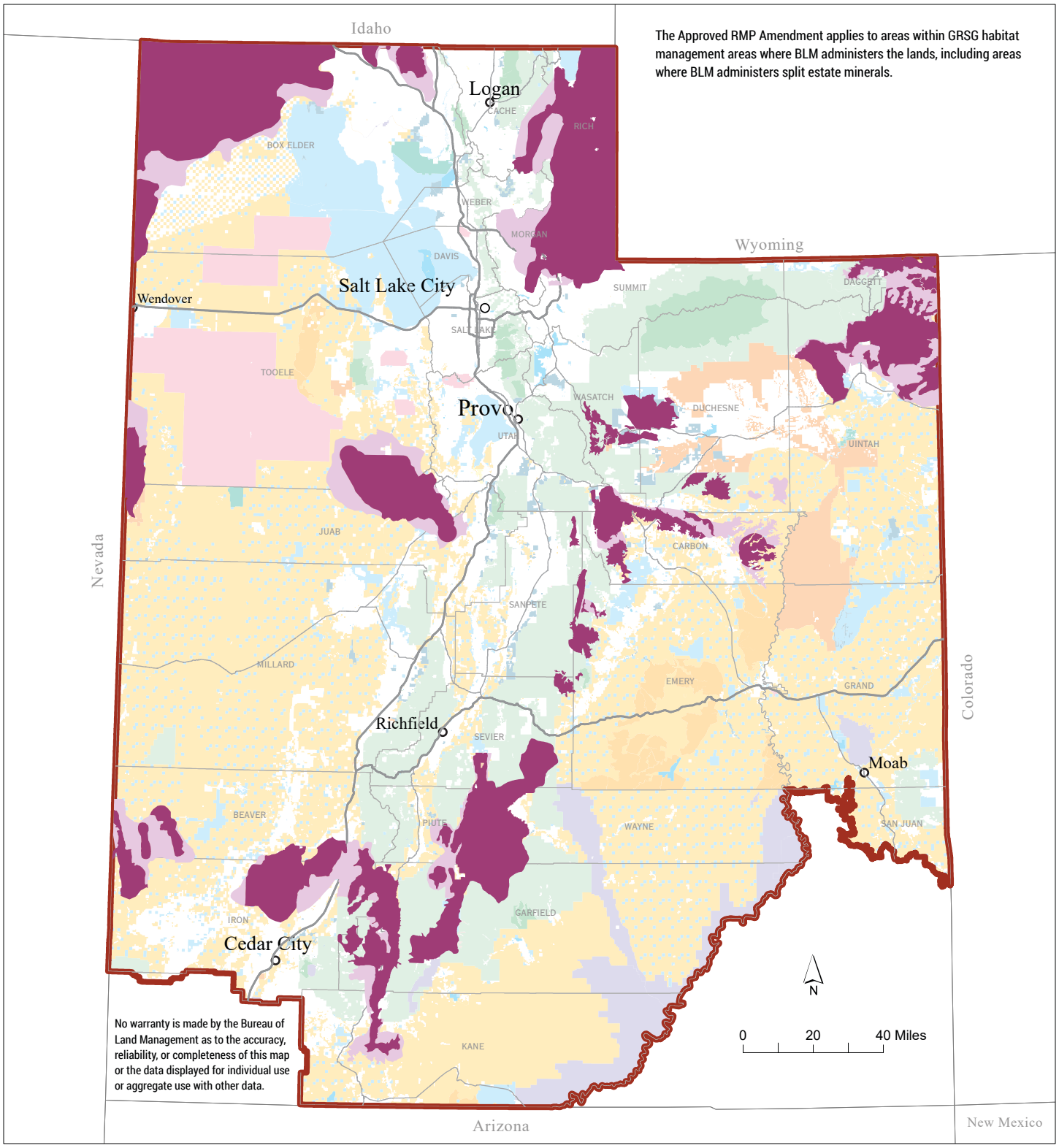

The Approved RMP Amendment applies to areas within GRSG habitat management areas where BLM administers the lands, including areas where BLM administers split estate minerals.

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- Planning Area Boundary
- PHMA
- GHMA
- Bureau of Land Management (BLM)
- BLM Wilderness
- Bureau of Reclamation
- Indian Reservation
- Military Reservations
- National Park Service
- Private
- State Land
- USFWS Wildlife Refuge
- USDA Forest Service
- USFW Wilderness Area

Map 4. Utah GRSG Habitat Management Areas (BLM Administered Lands)

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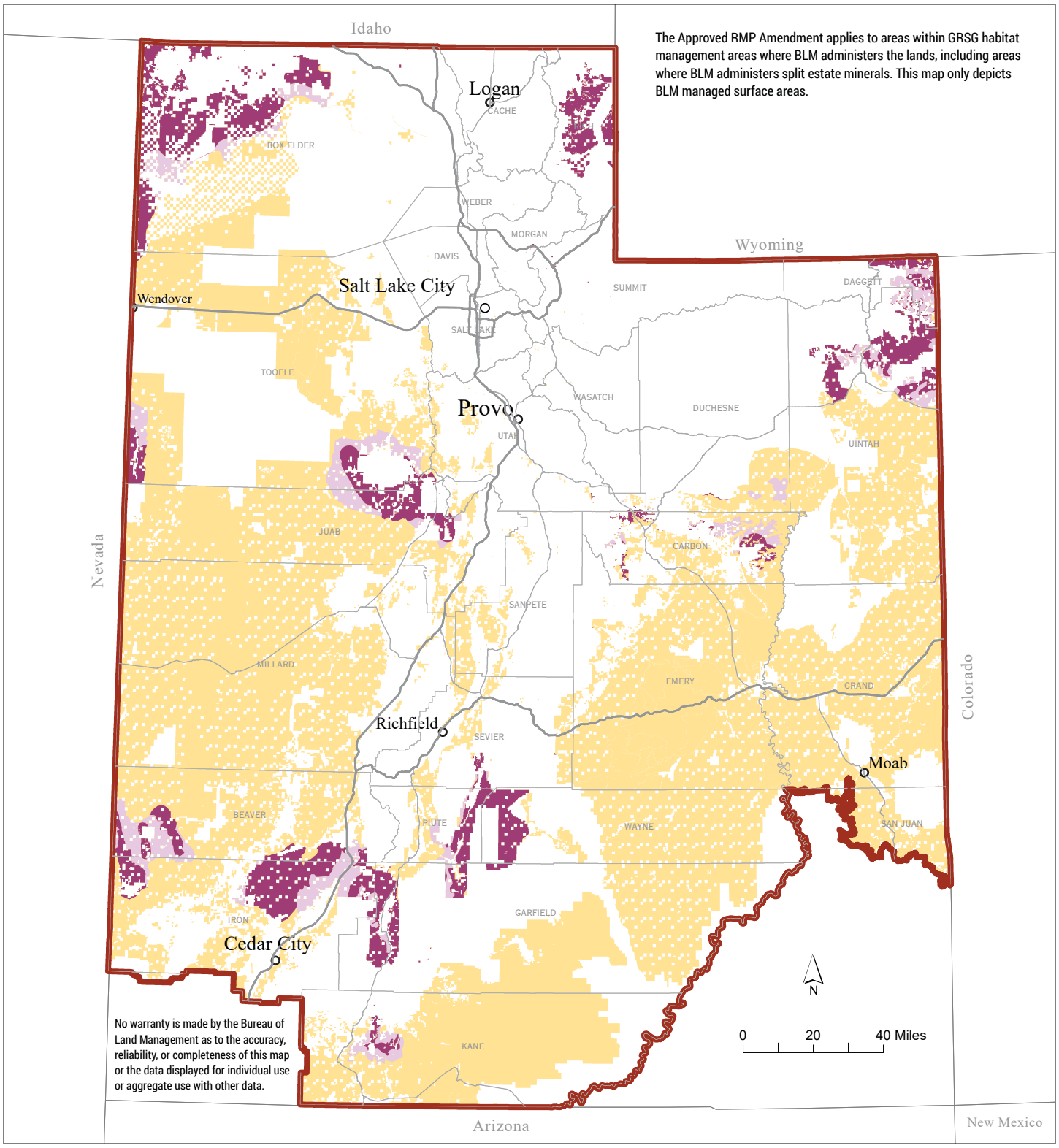

Planning Area Boundary

PHMA

GHMA

BLM Administered Lands

Map 5. Solar Energy Management

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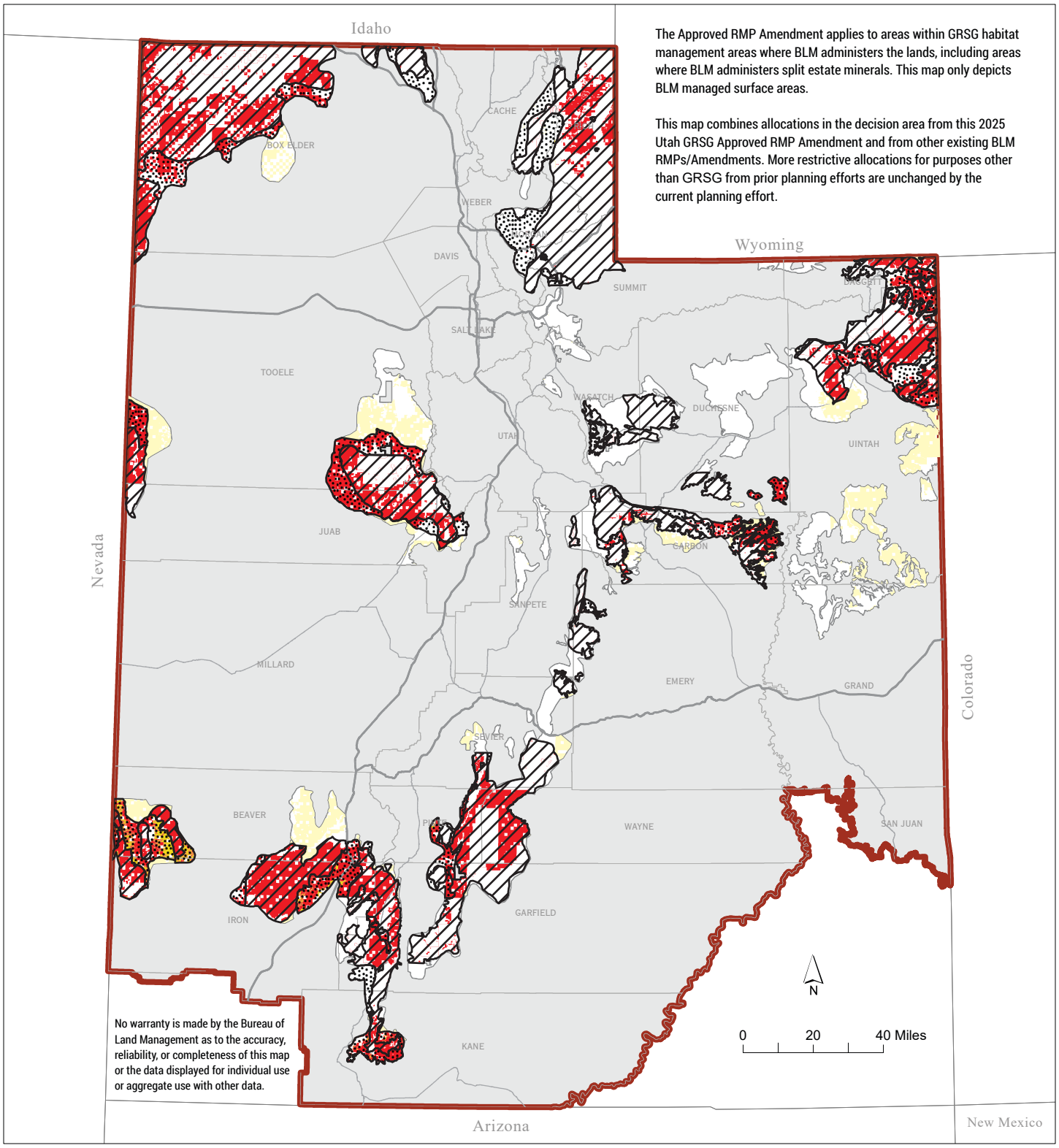

The Approved RMP Amendment applies to areas within GRSG habitat management areas where BLM administers the lands, including areas where BLM administers split estate minerals. This map only depicts BLM managed surface areas.

This map combines allocations in the decision area from this 2025 Utah GRSG Approved RMP Amendment and from other existing BLM RMPs/Amendments. More restrictive allocations for purposes other than GRSG from prior planning efforts are unchanged by the current planning effort.

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- Planning Area Boundary
- PHMA
- GHMA
- Solar Energy Management Open Zone
- Solar Energy Management Avoidance Zone
- Solar Energy Management Exclusion Zone
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 6. Wind Energy Management

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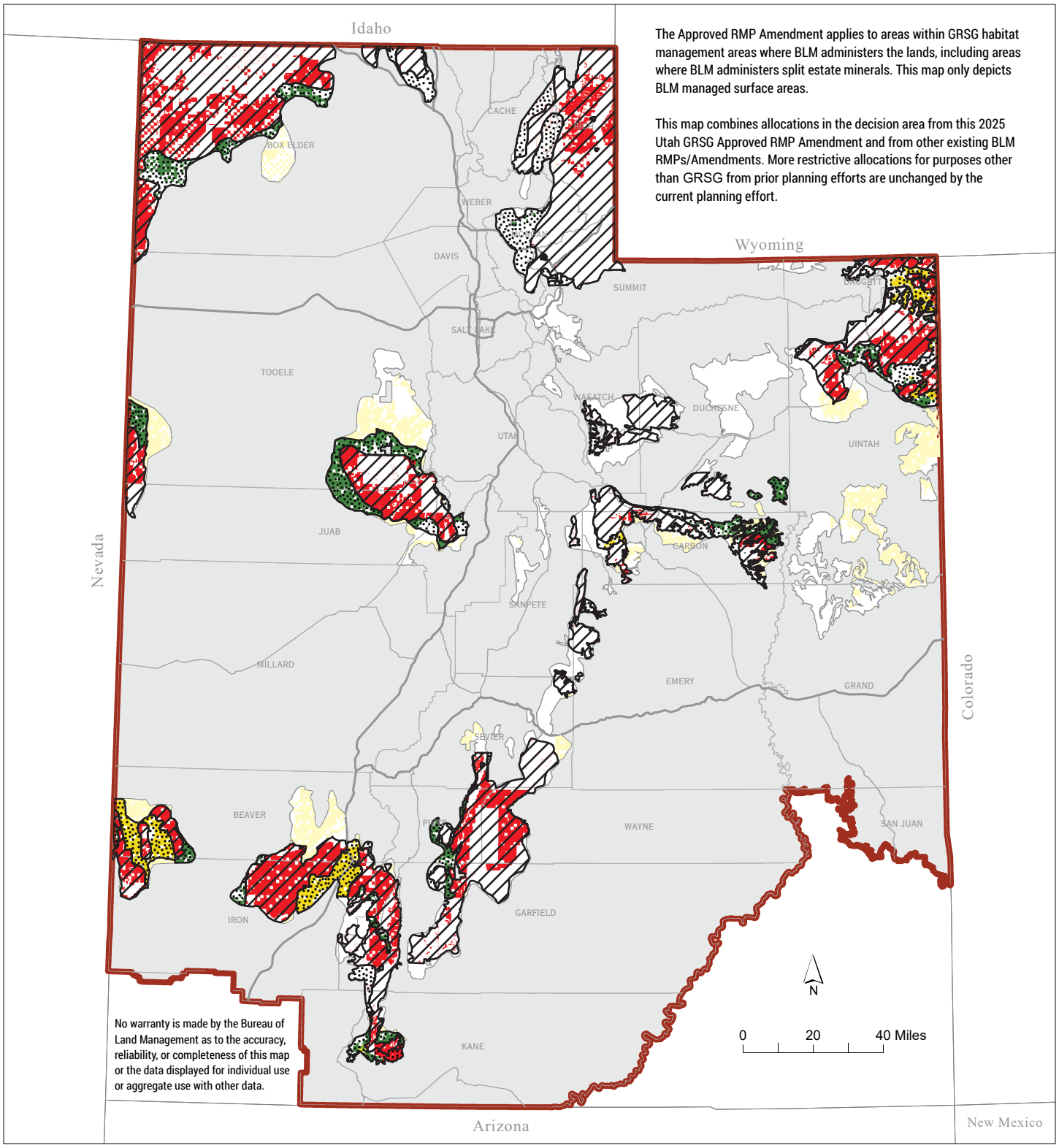

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- Planning Area Boundary
- PHMA
- GHMA
- Wind Energy Open
- Wind Energy Avoidance Areas
- Wind Energy Exclusion Areas
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 7. Fluid Minerals Leasing (including Geothermal)

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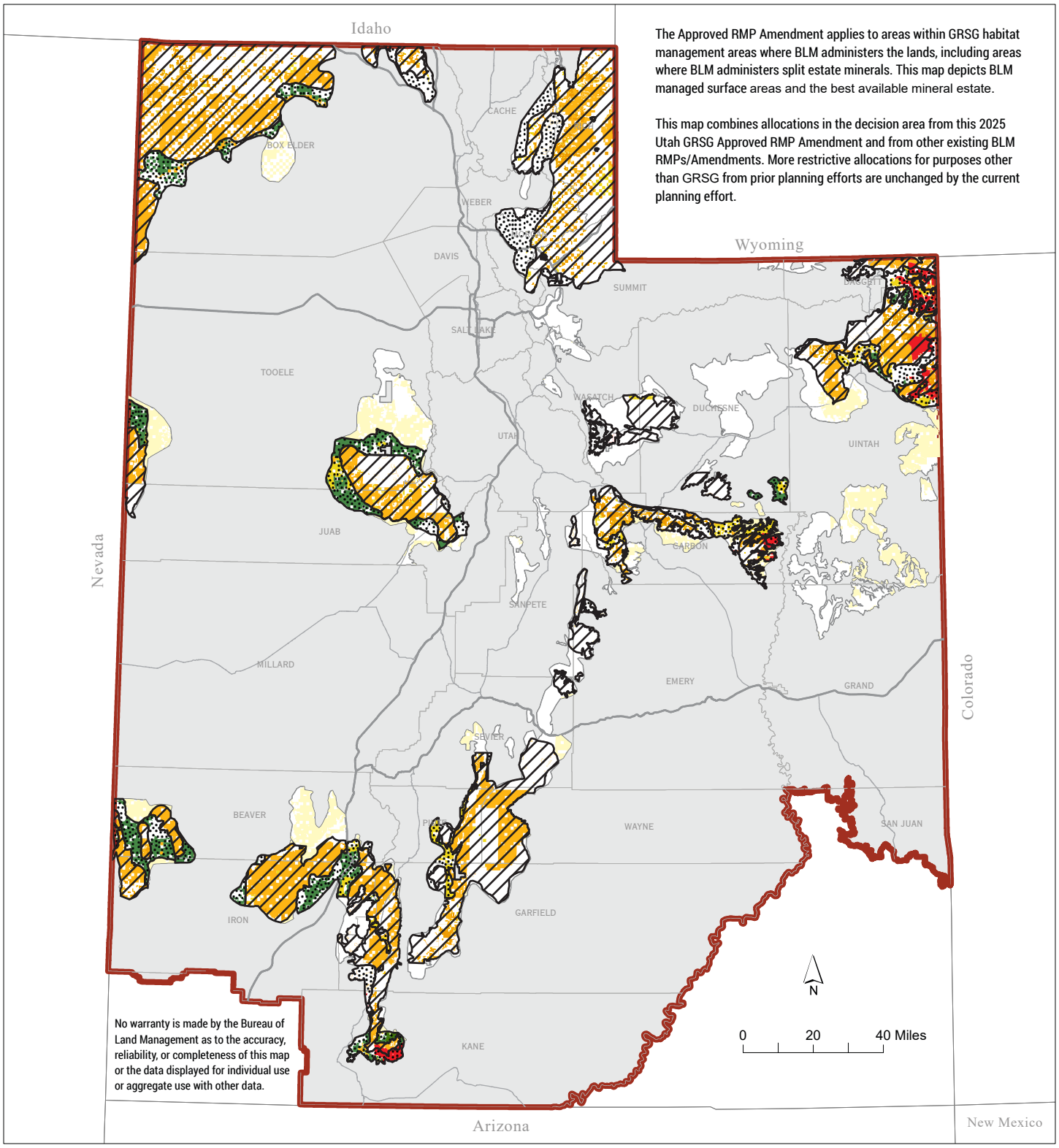

The Approved RMP Amendment applies to areas within GRSG habitat management areas where BLM administers the lands, including areas where BLM administers split estate minerals. This map depicts BLM managed surface areas and the best available mineral estate.

This map combines allocations in the decision area from this 2025 Utah GRSG Approved RMP Amendment and from other existing BLM RMPs/Amendments. More restrictive allocations for purposes other than GRSG from prior planning efforts are unchanged by the current planning effort.

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- Planning Area Boundary
- PHMA
- GHMA
- Fluid Minerals - Open with Standard Stipulations
- Fluid Minerals - Open with Moderate Stipulations
- Fluid Minerals - Open with Major Stipulations
- Fluid Minerals - Closed
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 8. Saleable Minerals

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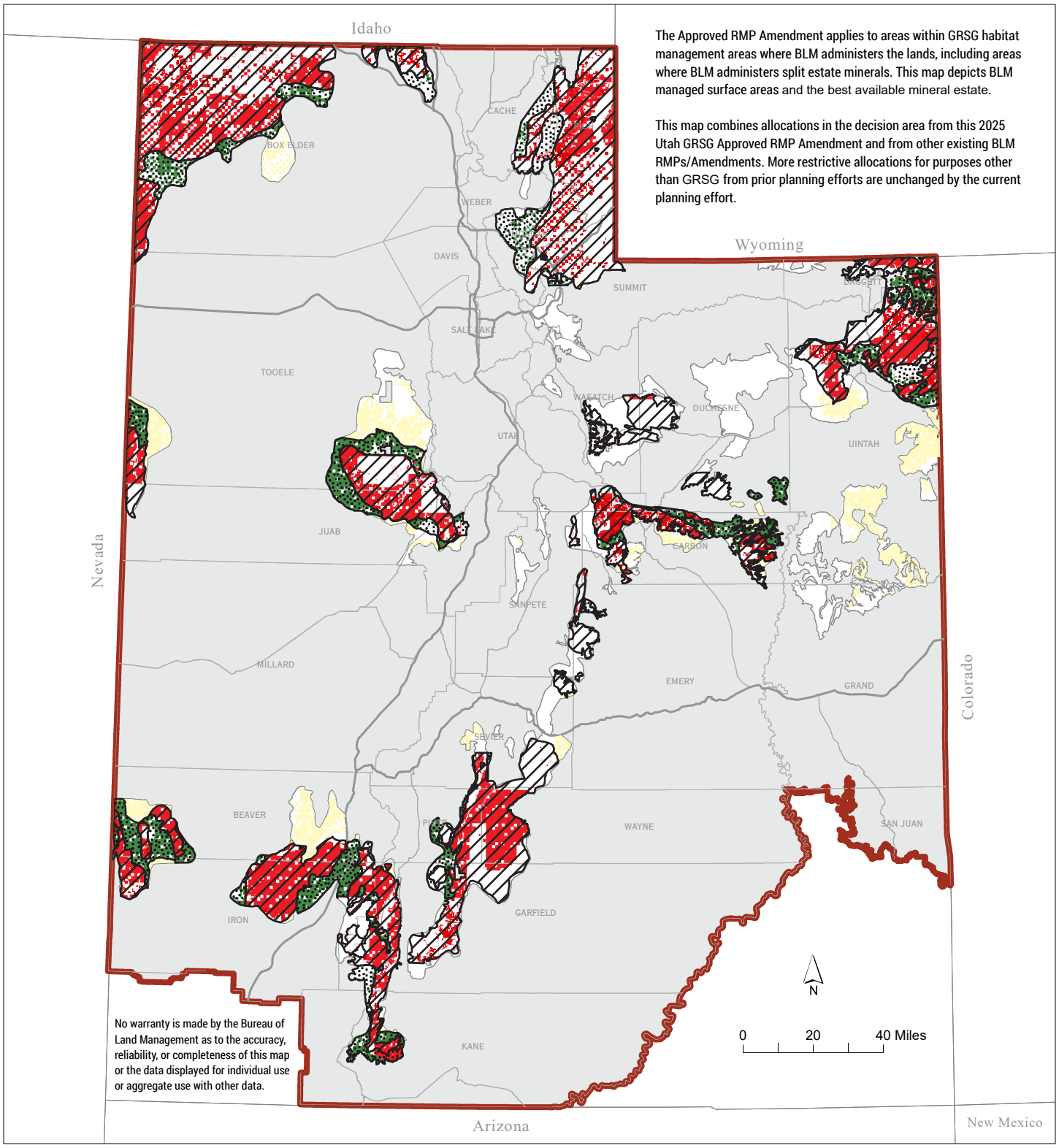
2025 Utah Greater Sage-grouse Record of Decision



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- Planning Area Boundary
- PHMA
- GHMA
- Saleable Minerals Open
- Saleable Minerals Closed
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 9. Nonenergy Leasable Minerals

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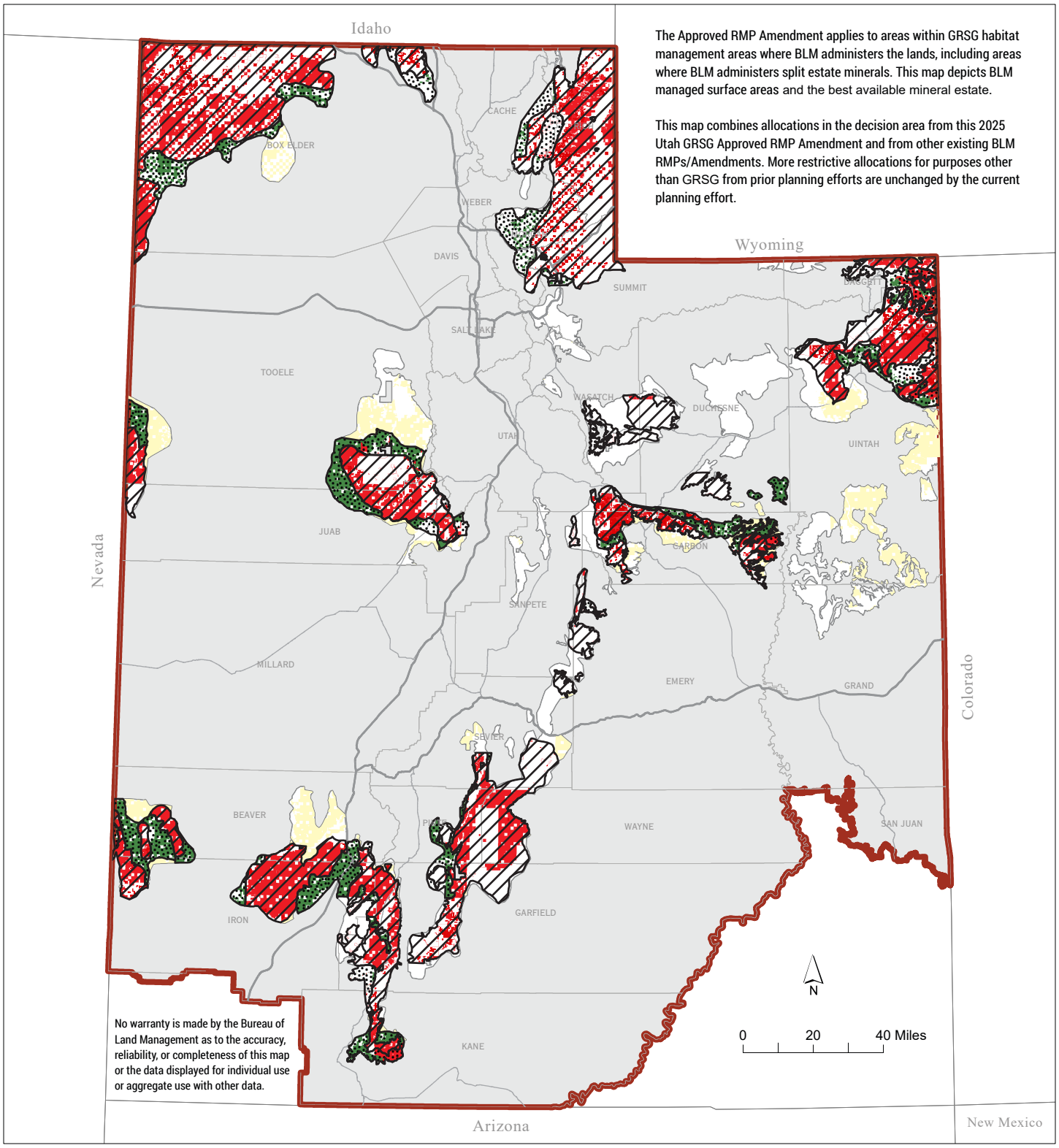

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This map combines allocations in the decision area from this 2025 Utah GRSG Approved RMP Amendment and from other existing BLM RMPs/Amendments. More restrictive allocations for purposes other than GRSG from prior planning efforts are unchanged by the current planning effort.

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- Planning Area Boundary
- PHMA
- GHMA
- Nonenergy Leasable Minerals Open
- Nonenergy Leasable Minerals Closed
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 10. Rights of Way

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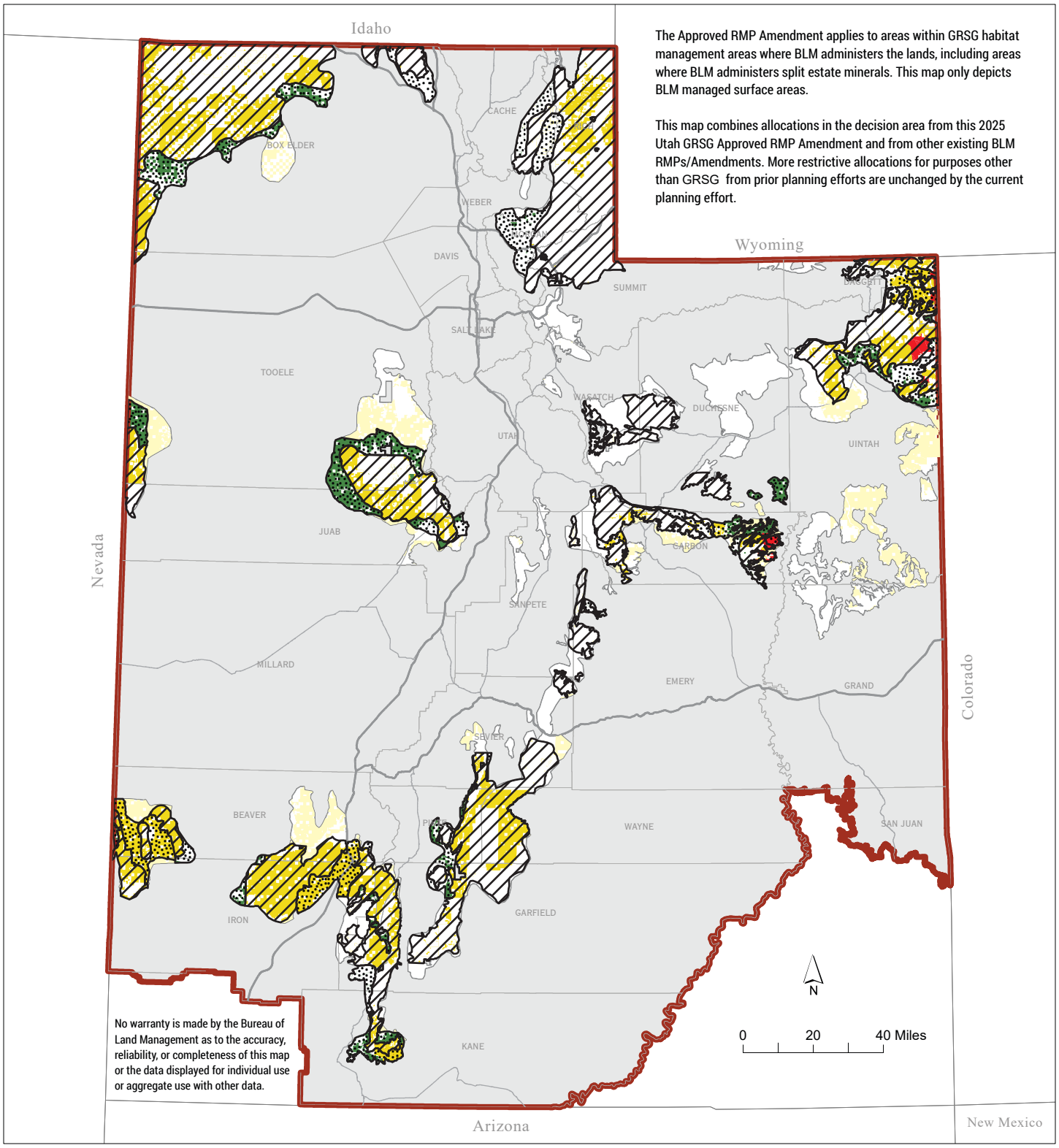

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- Planning Area Boundary
- PHMA
- GHMA
- Rights-of-way Open Areas
- Rights-of-way Avoidance Areas
- Rights-of-way Exclusion Areas
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

Map 11. Travel and Transportation Management

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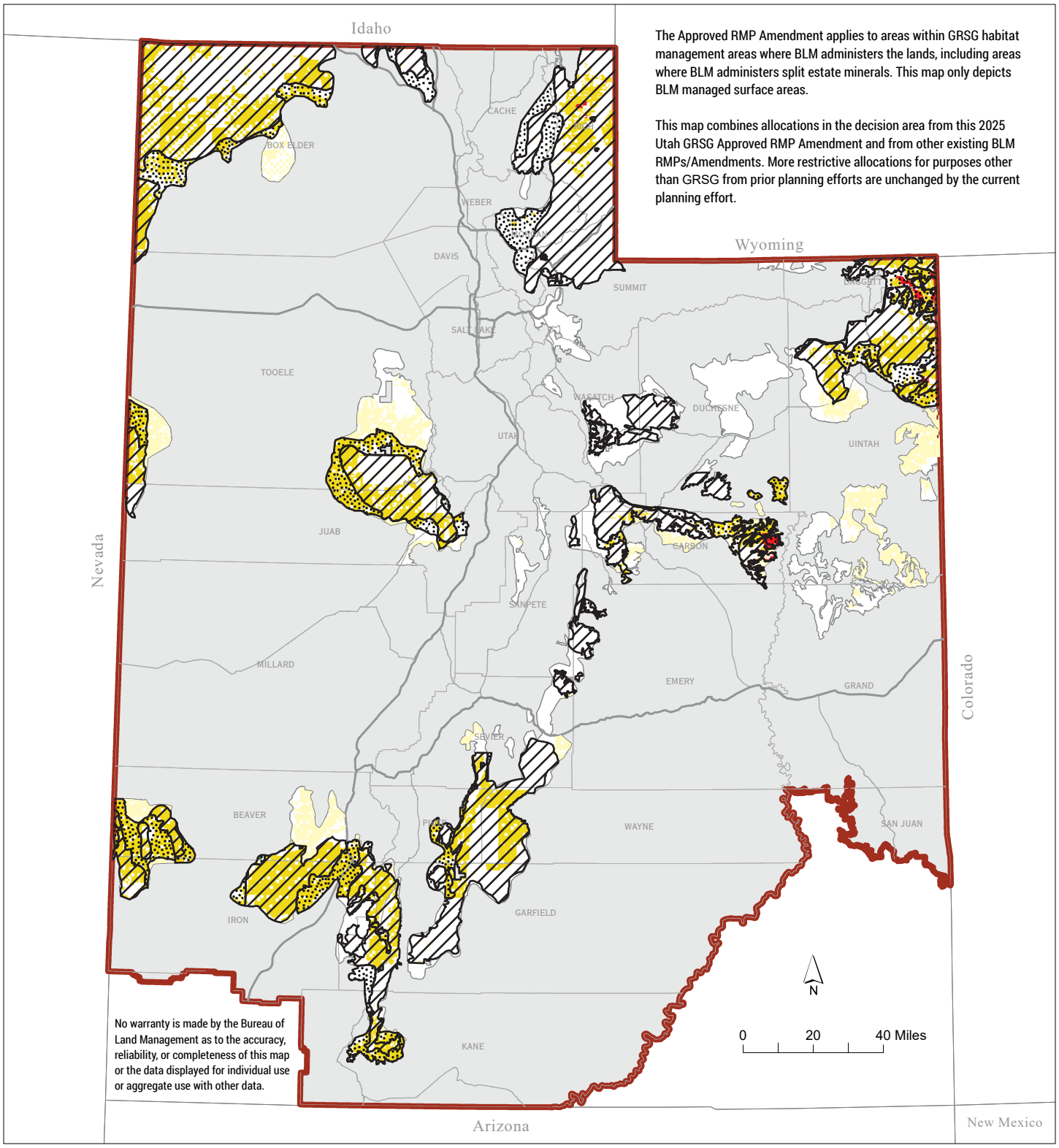

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- Planning Area Boundary
- PHMA
- GHMA
- Travel Management Open Areas
- Travel Management Limited Areas
- Travel Management Closed Areas
- Decision Area with No BLM Jurisdiction
- Planning Area Outside of Decision Area
- BLM Land with No 2025 GRSG Allocations

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Appendix 2

Comparison of Prior Greater Sage-Grouse RMP Management Direction with Approved RMP Amendment – Crosswalk Utah RMPs

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Appendix 2. Comparison of Prior Greater Sage-Grouse RMP Management Direction with Approved RMP Amendment – Crosswalk Utah RMPs

Blue rows = changes with 2025 Approved RMP Amendment; green rows = 2015 Approve RMP Amendment and Record of Decision; yellow rows = 2019 Approved RMP Amendment and Record of Decision

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
Special Status Species (SSS)	***Special Status Species (SSS)***	—	
GOAL:	**GOAL:**	—	
Goal SSS-1: Maintain and/or increase GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners.	No changes made.	Completely Revised - revised by rangewide.	**Goal SSS-1:** Manage lands in a manner that will protect the quality of scientific, ecological, and environmental values that will provide food and habitat for fish and wildlife and domestic animals, and that will provide for outdoor recreation and human occupancy and uses consistent with Section 102 of the Federal Land Policy Management Act (as amended). Manage GRSG habitat to support habitat connectivity and persistent, healthy populations, consistent with BLM's Special Status Species (SSS) Management Policy (BLM-M-6840) and in coordination and cooperation with state wildlife agencies and appropriate state authorities.
Objectives:	**Objectives:**	—	
Objective SSS-1: Designate PHMA that are large enough to stabilize populations in the short-term and enhance populations over the long-term. Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of GRSG. Enhance or improve GRSG habitat (e.g., through restoration or rehabilitation activities) within PHMA that has been impaired or altered.	No changes made.	No change (same as 2015).	Same as 2015.
Objective SSS-2: In all GRSG habitat, manage activities that result in habitat loss and degradation to provide a net conservation gain of GRSG habitat. Exceptions to net conservation gain for GRSG shall be made for vegetation treatments to benefit Utah prairie dog.	**Objective SSS-2:** In PHMA, manage activities that result in habitat loss and degradation to improve the condition of GRSG habitat across the planning area. Exceptions to this mitigation standard for GRSG shall be made for vegetation treatments to benefit Utah prairie dog.	Partially Revised – added GHMA.	**Revised Objective:** In GRSG HMAs, manage activities that result in habitat loss and degradation to improve the condition of GRSG habitat across the planning area. Exceptions to this mitigation standard for GRSG shall be made for vegetation treatments to benefit Utah prairie dog.
Objective SSS-3: In all GRSG habitat, where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ecological site description, maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats. The habitat objectives for GRSG (Table 2-2 in 2015 ARMPA, as maintained) is a list of indicators, characteristics, and values that describe GRSG seasonal habitat use areas. The BLM used indicator values derived from a synthesis of local and regional GRSG habitat research and data to describe the typical vegetation communities that sage-grouse select. While the habitat objectives are not attainable on every site or every acre within designated GRSG habitat management areas, the values reflect a range of habitat conditions that generally lead to greater survival of individuals within a population. When permitting land use activities, BLM should consider the ecological site potential within designated habitat management areas to validate the habitat conditions achievable for a specific site. In addition, areas where PHMA and GHMA overlap mapped Utah	**Objective SSS-3:** In PHMA, where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ecological site description, maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats. The habitat objectives for GRSG (Table 4 in 2019 ARMPA) is a list of indicators, characteristics, and values that describe GRSG seasonal habitat use areas. The BLM used indicator values derived from a synthesis of local and regional GRSG habitat research and data to describe the typical vegetation communities that sage-grouse select. While the habitat objectives are not attainable on every site or every acre within designated GRSG habitat management areas, the values reflect a range of habitat conditions that generally lead to greater survival of individuals within a population. When permitting land use activities, BLM should consider the ecological site potential within designated habitat management areas to validate the habitat conditions achievable for a specific site. In addition, areas where PHMA and GHMA overlap mapped Utah prairie dog habitat will be managed for both species; accomplishing this shall include coordination with	Completely revised – revised by rangewide.	

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
prairie dog habitat will be managed for both species; accomplishing this shall include coordination with species specific experts to develop conservation and recovery objectives that will benefit both species. The seasonal habitat descriptions in Table 2-2 (from the 2015 ARMPA, as maintained) vary across the range of sage-grouse, within a subregion, and between sites. They are not land health standards but are quantitative measures that inform the Special Status Species Habitat Land Health Standard for sage-grouse. These measurable values reflect ecological potential, and may be adjusted based on local factors influencing sage-grouse habitat selection. Local data or recent science may indicate that sage-grouse select for vegetation structure and composition in seasonal habitats not characterized by the values in the habitat objectives table. In these cases, it may be appropriate to adjust the values. Habitat objectives should be evaluated in the context of annual variability in ecological conditions and should not be used singly to determine habitat suitability for sage-grouse. They may be used to demonstrate trends over time, during plan evaluations for effectiveness of sage-grouse conservation, or when identify limiting habitat characteristics for a given area. The indicators, characteristics, values and desired seasonal habitat conditions in the GRSG Plan Habitat Objectives Table are meant to inform the wildlife habitat component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2), but do not replace rangeland health assessments. Results from the LHS evaluation should be used to support BLM in land use authorization processes and during development of objectives for management actions such as vegetation treatments. BLM land use authorizations will contain terms and conditions regarding the actions needed to achieve or make progress toward achieving habitat objectives and land health standards. The Habitat Objectives Tables are to be used: • To assess habitat suitability for sage-grouse following the BLM policy on sage-grouse habitat assessments • To evaluate land use plan effectiveness for sage-grouse conservation, and As a basis to develop measurable project objectives for actions in BLM-designated GRSG Habitat Management areas when considered alongside land health standards, ecological potential and local information.	species specific experts to develop conservation and recovery objectives that will benefit both species.` The seasonal habitat descriptions in Table 4 in 2019 ARMPA vary across the range of sage-grouse, within a subregion, and b`etween sites. They are not land health standards but are quantitative measures that inform the Special Status Species Habitat Land Health Standard for sage-grouse. These measurable values reflect ecological potential, and may be adjusted based on local factors influencing sage-grouse habitat selection. Local data or recent science may indicate that sage-grouse select for vegetation structure and composition in seasonal habitats not characterized by the values in the habitat objectives table. In these cases, it may be appropriate to adjust the values. Habitat objectives should be evaluated in the context of annual variability in ecological conditions and should not be used singly to determine habitat suitability for sage-grouse. They may be used to demonstrate trends over time, during plan evaluations for effectiveness of sage-grouse conservation, or when identify limiting habitat characteristics for a given area. The indicators, characteristics, values and desired seasonal habitat conditions in the GRSG Plan Habitat Objectives Table are meant to inform the wildlife habitat component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2), but do not replace rangeland health assessments. Results from the LHS evaluation should be used to support BLM in land use authorization processes and during development of objectives for management actions such as vegetation treatments. BLM land use authorizations will contain terms and conditions regarding the actions needed to achieve or make progress toward achieving habitat objectives and land health standards. The Habitat Objectives Tables are to be used: • To assess habitat suitability for sage-grouse following the BLM policy on sage-grouse habitat assessments • To evaluate land use plan effectiveness for sage-grouse conservation, and • As a basis to develop measurable project objectives for actions in BLM-designated GRSG Habitat Management areas when considered alongside land health standards, ecological potential and local information.	*(see above)*	Objective SSS [X]: Within GRSG habitat management areas provide suitable habitat by managing for connected mosaics of sagebrush and associated communities that provide for seasonal habitats, dispersal, and migration, while limiting widespread anthropogenic disturbances and fragmentation. This objective will be accomplished by applying RMP land use allocations and management actions among HMAs, proactive habitat treatments, and project-level application of mitigation (avoiding, minimizing, and compensating, per MS-1794 and H-1794) for internal and external project proposals. Objective SSS [Y]: Manage GRSG habitat management areas to provide seasonal habitats at the HAF site-scale (Level 4) by providing for habitat characteristics that support seasonal habitat needs, including adequate protective cover and food needed to survive and reproduce. Seasonal habitats may include areas where sagebrush is the current dominant vegetation type, sagebrush is a primary shrub species within the various states of the ecological site or dominated by other vegetation types but still provides GRSG habitats, such as mesic areas. This objective will be accomplished through the combination of RMP land use allocations and management actions and restoration – based on ecological potential, current vegetative condition, and existing seasonal values – and the project-level application of mitigation (avoiding, minimizing, and compensating, per MS-1794 and H-1794) for internal and external project proposals (refer to Mitigation direction in this table (Table 1).
		New Management Decision	**Definition of Lek:** **Management Direction:** Use the Western Association of Fish and Wildlife Agencies (WAFWA) lek definitions (Cook et. al., 2022). (Refer to **Appendix 6**, Glossary). Unless otherwise specifically noted, when language in the RMPs uses the term "lek" it applies to the WAFWA definition for "active lek."
		New Management Decision	**Management Action SSS [X1]:** Assess the suitability of GRSG habitat at HAF mid- and fine-scales (HAF Levels 2 and 3, respectively) based on the methods in the Sage-grouse HAF (Stiver et al. 2015, BLM TR 6710-1, as revised; see **Appendix 4**).

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
		New Management Decision	**Management Action SSS [X2]:** Design and implement projects that will maintain or improve habitat suitability, availability, and connectivity, based on site location, existing seasonal values, and habitat needs using the results of mid- and fine-scale habitat assessments and other complementary research, tools, or information and in coordination with partners across land management jurisdictions.
		New Management Decision	**Management Action SSS [Y1]:** Assess suitability of GRSG habitat at the HAF site-scale (Level 4) based on the methods in Sage-grouse HAF (Stiver et al. 2015, BLM TR 6710-1, as revised; **Appendix 4**) utilizing current geographically applicable research on seasonal habitat requisites of GRSG (see **Appendix 4**). Updates to seasonal habitat indicators and ESDs will be developed locally and coordinated with partners (see **Appendix 4**).
		New Management Decision	**Management Action SSS [Y2]:** Maintain, improve, or restore the suitability of GRSG seasonal habitats using the Habitat Indicators Table (see **Appendix 4**) to inform measurable project objectives during implementation-level planning for BLM-permitted and BLM-initiated site-specific actions in HMAs, in coordination with applicable partners. Use the results of site-scale habitat assessments and other best available information to inform management decisions and the design and implementation of habitat projects.
Table 2 (Habitat Objectives)	**Table 3 (Habitat Objectives)**		See Appendix 4 – Habitat Objectives Table
Objective SSS-4: Within PHMA, increase the amount and functionality of seasonal habitats by: • Maintaining or increasing sagebrush in perennial grasslands, where needed to meet the Habitat Objectives for Greater Sage-Grouse (Table 2-2 from the 2015 ARMPA, as maintained)), unless there is a conflict with Utah prairie dog. • Reducing conifer (e.g., pinyon/juniper) from areas that are most likely to support GRSG at a rate that is at least equal to the rate of encroachment. • Reducing the extent of annual grasslands. • Maintaining or improving corridors for migration or movement between seasonal habitats, as well as for long-term genetic connections between populations. • Maintaining or improving understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Conducting vegetation treatments based on the following 10-year (decadal) acreage objectives:	**Objective SSS-4:** Within PHMA, increase the amount and functionality of seasonal habitats by: • Maintaining or increasing sagebrush in perennial grasslands, where needed to meet the Habitat Objectives for Greater Sage-Grouse (Table 4 in 2019 ARMPA), unless there is a conflict with Utah prairie dog. • Reducing conifer (e.g., pinyon/juniper) from areas that are most likely to support GRSG at a rate that is at least equal to the rate of encroachment. • Reducing the extent of invasive annual grasslands. • Maintaining or improving corridors for migration or movement between seasonal habitats, as well as for long-term genetic connections between populations. • Maintaining or improving understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Conducting vegetation treatments based on the following 10-year (decadal) acreage objectives:	Same as 2015, but partially revised- remove parenthetical reference to habitat objectives table.	**Objective SSS-4:** Within PHMA, increase the amount and functionality of seasonal habitats by: • Maintaining or increasing sagebrush in perennial grasslands, where needed to meet the Habitat Objectives for Greater Sage-Grouse (**Appendix 4**), unless there is a conflict with Utah prairie dog. • Reducing conifer (e.g., pinyon/juniper) from areas that are most likely to support GRSG at a rate that is at least equal to the rate of encroachment. • Reducing the extent of annual grasslands. • Maintaining or improving corridors for migration or movement between seasonal habitats, as well as for long-term genetic connections between populations. • Maintaining or improving understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Conducting vegetation treatments based on the following 10-year (decadal) acreage objectives:

<table>
<tr><th>2015 BLM GRSG Approved RMP Amendment</th><th>Changes between 2015 and 2019 GRSG Management</th><th>2025 BLM GRSG Approved RMP Amendment (Summary)</th><th>2025 BLM GRSG Approved RMP Amendment (Full Text)</th></tr>
<tr>
<td>
Table 1a. Vegetation Treatments per 10-year (decadal) Acreage Objectives (2015)
<table>
<tr><th>Population Areas</th><th>Mechanical Treatment[1]</th><th>Annual Grass Treatment[1]</th></tr>
<tr><td>Box Elder</td><td>9,300</td><td>17,800</td></tr>
<tr><td>Ibapah; Hamlin Valley</td><td>17,900</td><td>2,100</td></tr>
<tr><td>Rich; Uintah</td><td>40,700</td><td>6,800</td></tr>
<tr><td>Carbon</td><td>2,600</td><td>200</td></tr>
<tr><td>Bald Hills; Panguitch</td><td>43,900</td><td>8,900</td></tr>
<tr><td>Parker Mountain</td><td>32,800</td><td>2,200</td></tr>
<tr><td>Sheeprocks</td><td>33,700</td><td>10,000</td></tr>
<tr><td>Statewide</td><td>180,900</td><td>48,000</td></tr>
</table>
[1] These acreage figures, based on Vegetation Dynamics Development Tool modeling, represent an objective for treatment on BLM-administered lands over a 10-year (decadal) time frame to support achievement or progress toward GRSG habitat objectives (see Final EIS Appendix V, Great Basin Vegetation Modeling using Vegetation Dynamics Development Tool). This accounts for variations in yearly funding availability and does not reflect a maximum or minimum acreage for any one treatment type or total treatment acreage, should funding and site specific conditions allow for more or less treatment acreage than described in order to meet habitat objectives.

Outside PHMA (in adjacent opportunity areas) improve and restore historical GRSG habitat to support GRSG populations and to maintain or enhance connectivity. Statewide, complete a decadal average of 170,200 acres of mechanical treatments and 33,000 acres of annual grass treatments. Prioritization is for completion of treatments within PHMA before treating areas outside.
</td>
<td>
Table 1b. Vegetation Treatments per 10-year (decadal) Acreage Objectives (2019)
<table>
<tr><th>Population Areas</th><th>Mechanical Treatment[1]</th><th>Annual Grass Treatment[1]</th></tr>
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[1] These acreage figures, based on Vegetation Dynamics Development Tool modeling, represent an objective for treatment on BLM-administered lands over a 10-year (decadal) time frame to support achievement or progress toward GRSG habitat objectives (see Final EIS Appendix V, Great Basin Vegetation Modeling using Vegetation Dynamics Development Tool). This accounts for variations in yearly funding availability and does not reflect a maximum or minimum acreage for any one treatment type or total treatment acreage, should funding and site specific conditions allow for more or less treatment acreage than described in order to meet habitat objectives.

Outside PHMA (in adjacent opportunity areas) improve and restore historical GRSG habitat to support GRSG populations and to maintain or enhance connectivity. Statewide, complete a decadal average of 170,200 acres of mechanical treatments and 33,000 acres of annual grass treatments. Prioritization is for completion of treatments within PHMA before treating areas outside.
</td>
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Outside PHMA (in adjacent opportunity areas) improve and restore historical GRSG habitat to support GRSG populations and to maintain or enhance connectivity. Statewide, complete a decadal average of 170,200 acres of mechanical treatments and 33,000 acres of annual grass treatments. Prioritization is for completion of treatments within PHMA before treating areas
</td>
</tr>
<tr>
<td>Objective SSS-5: Participate in local GRSG conservation efforts (e.g., the appropriate State of Utah agency, Natural Resources Conservation Service (NRCS), and local working groups) to implement landscape-scale habitat conservation, to implement consistent management to benefit GRSG, and to gather and use local research and monitoring to promote the conservation of GRSG.</td>
<td>No changes made.</td>
<td>No change (same as 2015).</td>
<td>Same as 2015.</td>
</tr>
</table>

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
Management Actions (MA):	**Management Actions (MA):**	—	
MA-SSS-1: Identify PHMA and GHMA as identified in Figure 2-1, Habitat Management Areas [2015 ARMPA Appendix A, Approved RMP Amendment Maps]): The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate. Minor adjustments to PHMA/GHMA external boundaries can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA/GHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol. The PHMA and GHMA objectives and management actions would apply to existing sagebrush areas and areas with ecological sagebrush potential within the respective PHMA and GHMA polygons. In the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for GRSG, including but not limited to rock outcrops, alkaline flats, and pinyon-juniper ecological sites. These are areas that do not have existing sagebrush or ecological potential to contain sagebrush. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency. Because of the importance of PHMA to conserve, enhance and restore GRSG and its habitat, objectives and management actions will apply to all the areas within the respective PHMA polygons. The GHMA objectives and management actions will apply to the areas of identified non-habitat within the GHMA polygons unless **all** the following conditions are met: • the non-habitat does not provide important connectivity between areas with existing or potential habitat; • all direct and indirect impacts that impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the GRSG population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document. Exceptions in non-habitat may be approved by the Authorized Officer, but only with the concurrence of one level of delegated authority above the Authorized Officer. Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with GRSG management in an area of non-habitat would not change the boundaries of PHMA or GHMA.	**MA-SSS-1:** Identify PHMA as identified in Table 10 in the 2019 ARMPA (Figure 2-1, Habitat Management Areas [Appendix A, 2019 ROD/ Approved RMPA Maps]): The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate. The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on GRSG habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied. Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting seasonal habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol. The PHMA objectives and management actions apply to ecological sites that currently provide GRSG habitat within the respective PHMA polygons, as well as areas with ecological potential for GRSG habitat that have not cross an ecological threshold to a different stable non-GRSG habitat vegetation community. Mapped PHMA may also include areas that lack the principle habitat components necessary for GRSG, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, and areas that have crossed an ecological threshold to a different stable non-GRSG habitat vegetation community, such as cheatgrass monocultures or pinyon/juniper woodlands (phase 3, absent sagebrush understory) (Chambers et al. 2014; Bestelmeyer et al. 2010; Bestelmeyer, et al. 2011). These are areas that do not contain sagebrush or other vegetation necessary for the various GRSG seasonal habitats. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency. The PHMA objectives and management actions will apply to the areas identified as habitat, as well as non-habitat within the PHMA polygons unless **both** of the following conditions are met:	Partially revised – updated HMA boundaries, non-habitat criteria.	**MA-SSS-1**: Identify PHMA and GHMA as identified **in Appendix 1, Maps and Tables:** The BLM applies its management allocations and management direction for GRSG within HMAs. Although the BLM has identified and mapped the HMAs to encompass multiple land ownerships, reflecting the wide-ranging ecological needs of GRSG, the management allocations and management direction that follow only apply to BLM-administered lands, including areas where BLM administers subsurface minerals. Following are the rangewide HMA categories. Utah has no other Utah-specific HMA. Refer to maps and tables in **Appendix 1, Maps and Tables**. The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on GRSG habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied. Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting seasonal habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol (Utah 2015 Approved RMP Amendment). **Criteria Based Management for Non-Habitat** Habitat management areas include areas where the BLM will apply goals, objectives, and management actions for conservation of GRSG. The HMAs are identified using inventory data on habitat use and occupancy and reflect the dynamic nature of the vegetation communities that make-up GRSG habitat. The HMA boundaries are not identified using survey-grade assessments (e.g., comprehensive on-the-ground surveys and edge verifications) and, in some states, are the result of large-scale modeling. Therefore, not every acre within an HMA boundary may be GRSG habitat. Additionally, because GRSG habitat use and occupancy and vegetation communities are dynamic, the BLM will use up-to-date

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
(see above)	• the non-habitat does not provide important connectivity between seasonal habitats; and • direct and indirect impacts on adjacent seasonal habitats (disturbance to or disruption of) that would impair their biological function of providing the life-history or behavioral needs of the GRSG population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document. Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with GRSG management in an area of non-habitat would not change the boundaries of PHMA.	*(see above)*	high-quality information, including field investigations, , to make adjustments to the management actions to be applied within identified HMA boundaries. In accordance with existing law, regulation and policy, inventories will continue to be conducted to provide information on GRSG habitat and distribution (BLM Manual 6840.04). Non-habitat consists of areas that lack the ecological potential to provide principal habitat components necessary to support GRSG. In the mapped GRSG HMAs, there may be areas of non-habitat and where conformance with the RMP would not support GRSG conservation. Refer to definitions for existing habitat, potential habitat, and non-habitat Appendix 6, Glossary). If, during consideration of a project level authorization within GRSG PHMA and GHMA, potential non-habitat is identified by the BLM, a project-specific review should be conducted by a wildlife biologist or reviewed and accepted for confirmation by the BLM. This review should use published, scientific methods (preferably more than one) for identifying GRSG habitat (e.g., Stiver et. al. 2015 [as revised]), ESDs and associated STMs and be coordinated with the appropriate state agencies. Any discrepancies between the mapped GRSG HMAs and the site-specific conditions will be disclosed, with supporting data (e.g., vegetation monitoring, STMs, ESDs) and analyzed as a component of the NEPA process. However, indirect and direct impacts to adjacent GRSG populations and their habitats, including potential habitat still need to be considered when planning and authorizing projects in these non-habitat areas. All management objectives and decisions associated with each management area type will apply unless all the following criteria are documented: 1. Project is proposed in verified non-habitat. 2. There are no indirect impacts to adjacent habitat or individual or populations of GRSG occupying these adjacent areas due to project design and required design features (e.g., minimize noise, preclude tall structures, require perch deterrents, etc.), as demonstrated in the project's NEPA document. Indirect impact consideration includes the following: (1) The project does not impact connectivity, i. Within or between populations; or ii. Between seasonal habitats (e.g., nesting, early brood rearing, winter,); or iii. Within or between existing habitat. 3. Any project related access through/across GRSG habitat as verified through site-specific field checks only occurs on existing routes, and the proposed action would not include new roads or upgrades to roads that would change the vehicle use, vehicle type, or traffic volume during the applicable season of GRSG use, subject to valid existing rights, throughout all stages of the proposed project.

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
(see above)	*(see above)*	*(see above)*	4. Coordination with the appropriate state and federal agency biologists and other appropriate staff has been documented. If coordination is not possible the reasons and attempts at coordination will be documented. All proposed actions, including those in the same area, would need to undergo individual analysis to confirm the criteria are met prior to authorization. Exempting a proposed project from the management actions that would otherwise be required in a GRSG habitat management area identified on the maps in this Approved RMP Amendment because the proposal has been determined to be in non-habitat, based on the above criteria, would not change the GRSG habitat management area boundaries as identified in the RMP. The determination to exempt a proposed project from the management actions that would otherwise be required in the GRSG habitat management area identified in maps in this Approved RMP Amendment, when supported by science and consistent with the criteria above, may only be made by the Authorized Officer. If the coordinating federal and/or state wildlife biologists, do not concur with the Authorized Officer, then the determination will be at the discretion of the BLM State Director.
MA-SSS-2: Designate SFA as shown on Figure 2-1 (181,100 acres of BLM surface estate; 52,200 acres split-estate federal minerals). SFA will be managed as PHMA, with the following additional management: • Recommended for withdrawal from the Mining Law of 1872 (as amended), subject to valid existing rights. • Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing. • Prioritized for vegetation management and conservation actions in these areas, including, but not limited to land health assessments, wild horse and burro management actions, review of livestock grazing permits/leases, and habitat restoration (see specific management sections).	No similar action.	No change (same as 2019).	Same as 2019.
MA-SSS-3: In PHMA, apply the following management to discretionary disturbances or activities that are not otherwise excluded or closed to minimize and mitigate effects on GRSG and its habitat from the project/activity:	**MA-SSS-3:** In PHMA, apply the following management to discretionary disturbances or activities that are not otherwise excluded or closed to minimize and mitigate effects on GRSG and its habitat from the project/activity:	Various revisions – see section specific revisions below	**MA-SSS-3:** In PHMA, apply the following management to discretionary disturbances or activities that are not otherwise excluded or closed to minimize and mitigate effects on GRSG and its habitat from the project/activity:
MITIGATION			
			Objective: In GRSG HMAs, manage activities that result in habitat loss and degradation to improve the condition of GRSG habitat across the planning area. Exceptions to this mitigation standard for GRSG shall be made for vegetation treatments to benefit Utah prairie dog.

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-SSS-3: A- Net Conservation Gain In all GRSG habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for GRSG shall be made for vegetation treatments to benefit Utah prairie dog. Mitigation will be conducted according to the mitigation framework contained in Appendix F, Mitigation Strategy: Utah Greater Sage-Grouse RMPA. Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (Appendix D)−under valid existing rights prior to authorizing new projects in PHMA.	**MA-SSS-3:** A- Mitigation Strategy In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level GRSG management goals and objectives through implementation of mitigation and management actions. Under this Proposed Plan Amendment, management would be consistent with the GRSG goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [GRSG] or to improve the condition of [GRSG] habitat" across the planning area. Exceptions to this mitigation strategy for GRSG shall be made for vegetation treatments to benefit Utah prairie dog. Compensation, which involves replacing or providing substitute resources for the impacts (including through payments to fund such work), would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State recommendation or requirement. Therefore, consistent with valid existing rights and applicable law, when considering third-party actions that result in habitat loss and degradation, the BLM will consider compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority; when required by a federal law other than FLPMA; or when offered voluntarily by a project proponent. Accordingly, before authorizing third-party actions that result in habitat loss and degradation in PHMA or State of Utah SGMAs, the BLM will complete the following steps: 1) Notify the appropriate State of Utah agency to determine if the State of Utah requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of GRSG; 2) Recommend to the project proponent that it coordinate with the appropriate State of Utah agency to ensure it complies with all applicable State requirements relating to its proposal; 3) Consider the State's recommendations – if the State of Utah determines that there are unacceptable residual impacts on GRSG or its habitat and compensatory mitigation is required as a part of State policy or authorization, or if a proponent voluntarily offers mitigation, the BLM will incorporate that mitigation into the BLM's NEPA and decision-making process; 4) The BLM will ensure mitigation outcomes are consistent with the State of Utah's mitigation strategy and principles outlined in the State's Conservation Plan for Greater Sage-Grouse, including, but not limited to: a) Creating, restoring and/or protecting functional habitat or habitat corridors to offset the impacts of unavoidable disturbance to GRSG habitat, **b)** In most cases, compensatory mitigation projects should be completed before the project triggering mitigation occurs,	Partially revised – updated regulation and policy references.	A- Mitigation Strategy In PHMA and GHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level GRSG management goals and objectives through implementation of mitigation and management actions. Under this Proposed Plan Amendment, management would be consistent with the GRSG goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [GRSG] or to improve the condition of [GRSG] habitat" across the planning area. Exceptions to this mitigation strategy for GRSG shall be made for vegetation treatments to benefit Utah prairie dog. Compensation, which involves replacing or providing substitute resources for the impacts (including through payments to fund such work), would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State recommendation or requirement. Therefore, consistent with valid existing rights and applicable law, when considering third-party actions that result in habitat loss and degradation, the BLM will consider compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority; when required by a federal law other than FLPMA; or when offered voluntarily by a project proponent. Accordingly, before authorizing third-party actions that result in habitat loss and degradation in PHMA or State of Utah SGMAs, the BLM will complete the following steps: 1. Notify the appropriate State of Utah agency to determine if the State of Utah requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of GRSG; 2. Recommend to the project proponent that it coordinate with the appropriate State of Utah agency to ensure it complies with all applicable State requirements relating to its proposal; 3. Consider the State's recommendations – if the State of Utah determines that there are unacceptable residual impacts on GRSG or its habitat and compensatory mitigation is required as a part of State policy or authorization, or if a proponent voluntarily offers mitigation, the BLM will incorporate that mitigation into the BLM's NEPA and decision-making process; **4.** The BLM will ensure mitigation outcomes are consistent with the State of Utah's mitigation strategy and principles outlined in the State's Conservation Plan for Greater Sage-Grouse, including, but not limited to:

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(see above)	c) Compensatory mitigation projects should account for the risk that the mitigation may fail or not persist for the full duration of the project it is intended to offset, d) Compensatory mitigation projects should provide habitat that is in place for at least the duration of the project it is intended to offset. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action. The BLM will not deny a proposed authorization in GRSG habitat solely on the grounds that the proponent has not proposed or agreed to undertake voluntary compensatory mitigation. In cases where waivers, exceptions, or modification may be granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State's GRSG management plans and policies. In short, the BLM would continue to apply the mitigation hierarchy as described in the CEQ regulations at 40 CFR 1508.20; however, the BLM would focus on avoiding, minimizing, rectifying, and reducing impacts over time. Compensation would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State recommendation or requirement. The BLM commits to cooperating with the State to analyze applicant-proposed, state-recommended, or state-imposed compensatory mitigation to offset residual impacts. The BLM remains committed to achieving the planning-level management goals and objectives identified in this ROD and the 2015 Approved RMP Amendment by ensuring GRSG habitat impacts are addressed through implementing mitigating actions consistent with the governing RMP.	*(see above)*	a. Creating, restoring and/or protecting functional habitat or habitat corridors to offset the impacts of unavoidable disturbance to GRSG habitat, b. In most cases, compensatory mitigation projects should be completed before the project triggering mitigation occurs, c. Compensatory mitigation projects should account for the risk that the mitigation may fail or not persist for the full duration of the project it is intended to offset, d. Compensatory mitigation projects should provide habitat that is in place for at least the duration of the project it is intended to offset. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action. The BLM will not deny a proposed authorization in GRSG habitat solely on the grounds that the proponent has not proposed or agreed to undertake voluntary compensatory mitigation. In cases where waivers, exceptions, or modification may be granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State's GRSG management plans and policies. In short, the BLM would focus on avoiding, minimizing, rectifying, and reducing impacts over time. Compensation would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State recommendation or requirement. The BLM commits to cooperating with the State to analyze applicant-proposed, state-recommended, or state-imposed compensatory mitigation to offset residual impacts. The BLM remains committed to achieving the planning-level management goals and objectives identified in this ROD and the 2015 ARMPA by ensuring GRSG habitat impacts are addressed through implementing mitigating actions consistent with the governing RMP.

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DISTURBANCE CAP			
MA-SSS-3: B- Disturbance Cap In PHMA, manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) PHMA associated with a GRSG population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area. If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within GRSG PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within GRSG PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. An area with disturbance is not excluded from the 3 percent until it has been restored to provide GRSG habitat. The objective of successful restoration is to provide for the needs of GRSG, as evidenced by one of the following: • Vegetative cover is consistent with the GRSG habitat objectives and the ecological site description (Objective SSS-3), or • Monitoring indicates the area is regularly used by GRSG to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter). Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.	**MA-SSS-3:** B- Disturbance Cap In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a GRSG population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within GRSG PHMA in any given population area (BSU) or within a proposed project analysis area in PHMA, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within GRSG PHMA in any given population area (BSU) or the proposed project analysis area until the disturbance has been reduced to less than the cap. However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area or within the PHMA in the population area where the project is located. Factors considered by the team will include Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors. Such exceptions to the 3 percent disturbance cap may only be approved by the BLM Authorized Officer with the concurrence of the State Director. The finding and recommendation shall be made by the technical team, which should consist of, at least, a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency. Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that doing so will improve the condition of Greater Sage-Grouse habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. An area with disturbance within GRSG habitat is not excluded from the 3 percent cap until it provides GRSG habitat. The objective of successful restoration of disturbed GRSG seasonal habitats is to provide for the needs of GRSG, which could be evidenced by one of the following:	Completely revised – revised by rangewide.	B- Disturbance Cap **Management Direction**: If direct habitat anthropogenic disturbance from existing and proposed infrastructure developments exceeds either: 1) 3% at the project scale (refer to description below) or 2) 3% at the HAF fine-scale habitat selection area; New infrastructure projects would be deferred to the extent allowable under applicable laws, or valid existing rights: a. until such time as the percentage of habitat disturbance in the areas has been reduced below the cap threshold through restoration of existing disturbance to meeting habitat objectives or increasing the amount of suitable habitat through restoration, or b. redesigned to not result in additional surface disturbance (co-location), redesigned to move it outside of habitat in PHMA (refer to non-habitat criteria in this table), or c. redesigned to move it outside PHMA. **Disturbance Cap Calculation** Numerator The disturbance cap calculation is limited to the following specific activities, whether existing projects or new proposals (refer to **Appendix 3** for additional details on how these items would be monitored): • Oil and gas wells and development facilities • Coal mines • Wind developments (e.g., towers, sub-stations) • Solar fields • Geothermal development facilities • Mining (active locatable, nonenergy leasable and saleable/mineral material developments) • Roads: transportation features with a maintenance intensity of level 3 or 5 – (BLM Technical Note 422 – Roads and Trails Terminology, 2006 or as updated) and does not include two-tracks • Railroads • Power lines • Communication towers • Other vertical infrastructure, as well as developed rights-of-way with habitat loss (e.g., pipelines) In addition to the specific activities listed above, the following additional activities will be incorporated into the numerator at the project scales • Coal bed methane ponds • Meteorological towers (e.g., wind energy testing)

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(see above)	• Vegetative cover is consistent with the GRSG habitat objectives and the ecological site description (Objective SSS-3), or • Monitoring indicates the area is regularly used by GRSG to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter). Include a schedule in project authorizations for monitoring the status of restoration efforts (e.g., areas of disturbance that meet the restoration criteria). Areas where disturbance would exceed 3 percent after project construction should include annual assessments to prioritize restoration efforts and determine what areas have been restored. Areas of PHMA that were not Greater Sage-Grouse habitat at project initiation would be excluded from the 3 percent cap calculation upon project completion and reclamation, as outlined in the applicable lease or permit. Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports. Consider the likelihood of development of not-yet-constructed surface-disturbing activities—as defined in Table D.2 of the Monitoring Framework (Appendix D of the 2015 ROD/ Approved RMPA)—under valid existing rights prior to authorizing new projects in PHMA.	*(see above)*	• Nuclear energy facilities) • Airport facilities and infrastructure • Hydroelectric plants/facilities (at the project scale) Where such data are available, this disturbance is measured by the footprint of direct disturbance of the PHMA area where habitat Is removed (including staging areas, dispersed structures, parking lots, and equipment storage areas), or by the distance between the outermost lines for transmission lines. A disturbed area is included in the numerator until it has been restored to provide equal or improved habitat function as was provided by the area before the disturbance. When considering new project proposals, any project associated with the above list that has been approved/authorized but not yet constructed should be treated as though it were already constructed when calculating the disturbance cap to account for authorized but not yet constructed disturbance. No other activities or actions beyond those listed above are included when calculating the cap (e.g., wildfire, agriculture, vegetation treatments, residences, barns, fencing or range improvements, etc.). BLM will coordinate with state agencies and use available HAF and land health data in determining if the habitat function of an area has been restored. Consistent with the BLM's responsibility to consider cumulative impacts when making decisions for activities on public lands, the disturbance percentage includes acres from the above disturbances regardless of land ownership, where such data are available. This will only inform decision-making on public lands and cannot impact private property rights. Wildfire and agriculture would not be included in the numerator at the HAF fine-scale. <u>Denominator</u> At the project scale, the assessment area (denominator) is determined by identifying the extent of the GRSG PHMA that supports the GRSG population potentially affected by the proposed project that is also located in PHMA; it is not to be limited to the area where indirect impacts are anticipated. The project scale denominator should include the PHMA used by the potentially affected local GRSG population, including the associated seasonal habitats and the transition zones between those habitats within PHMA associated with where the project is proposed. If sufficient monitoring information is not available to identify the portions of the PHMA used by the potentially affected local GRSG population, identify project level boundaries using an approach similar to the DDCT approach developed by the State of Wyoming: 1) Determine potentially affected active leks by placing a 4-mile buffer around the proposed area of physical disturbance related to the proposed project. All active leks located within the 4-mile project buffer and within PHMA will be considered affected by the project. 2) Next, place a 4-mile buffer around each of the affected active leks. 3) All PHMA within the 4-mile project buffer, combined with the 4-mile lek buffer(s), creates the project analysis

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(see above)	*(see above)*	*(see above)*	area for each individual project, absent other monitoring data. If there are no active leks within the 4-mile project buffer, the project scale analysis area will be that portion of the 4-mile project buffer within PHMA. "Pending leks" and other similarly defined state-based lek categories can be considered as active leks based on inclusion from the state wildlife agency or appropriate state authority. At the HAF fine-scale, the denominator is the acres of PHMA within the boundaries of the HAF fine-scale habitat delineation area. Calculation of the 3% cap would include all acres of PHMA in the fine-scale area as the denominator. At either scale, all areas in PHMA would be included in the denominator unless specific information documents areas of non-habitat or unsuitable habitat (i.e., seasonal habitat maps for the HAF fine-scale assessment area). Any potential areas that are non-habitat or are unsuitable at the HAF site-scale are treated neither as habitat nor disturbance, which results in the area being removed from the denominator piece of the formula. The denominator includes all lands, regardless of land ownership, to help the BLM consider the cumulative impacts of disturbances on GRSG when considering projects on public lands. **Disturbance Cap Exceptions** Authorized Officer may consider projects on public lands that could result in exceeding the disturbance cap across all ownership at the **project scale** only if the project meets the criteria for one of the following categories of exceptions and also meets the following conditions applicable to that exception: **Categories** for **Disturbance Cap Exceptions:** a. If the disturbance is associated with the renewal or re-authorization of existing infrastructure in previously disturbed sites or expansions of existing infrastructure that do not result in new direct, indirect, or cumulative impacts on GRSG and its habitat, and is documented. b. If a technical team evaluates and concludes site-specific GRSG habitat and population information, combined with project design elements – including voluntary compensatory mitigation, indicates the proposed project is expected to improve the condition of GRSG habitat within the proposed project analysis area. The technical team should consist of, at a minimum, a BLM field office biologist and a biologist from the appropriate state agency. The methods, rationale, and data used in developing recommendations shall be retained as part of the project record. c. If the disturbance is within an RMP designated utility corridor~~s~~, the disturbance cap may be exceeded if site specific NEPA analysis indicates doing so will decrease impacts to GRSG habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects that fulfill the use for which the corridors were designated (e.g., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. The disturbance cap

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(see above)	*(see above)*	*(see above)*	cannot exceed 3% at the HAF fine-scale. A plan amendment would be required for the development of new corridors and, as necessary, would need to appropriately address any changes in the disturbance cap. d. If the environmental review document(s) explains how the GRSG RMP goals and objectives will be met, including avoidance first (e.g., locating the proposed projects outside PHMA, colocation within footprint of existing disturbance), then minimization (including application of RDFs, etc.) with appropriate documentation. The environmental review document must also consider the cumulative effects of other exceptions granted in adjacent project scale units. If avoidance is not possible and minimization does not address all direct, indirect, and cumulative impacts, voluntary compensatory mitigation can be considered, in coordination with the appropriate state agency. **If one or more of the exception criteria can be met, the activity associated with the disturbance must also meet all of the following conditions in order to be permitted:** a. All disturbance cap exceptions MUST have concurrence from the State Director. b. If the exception relies on voluntary compensatory mitigation and also in compliance with state authorities: 1. The mitigation must be completed prior to the disturbance that results in the exceedance of the disturbance cap and provide the same or better value habitat based on site limitations, or better based on site limitations, **AND** 2. The compensation must be implemented in the same HAF fine-scale unit as the potential development. Consideration may be given to providing compensatory mitigation in adjacent fine-scale HAF areas if doing so will more effectively provide the offsetting benefit. c. If proposed disturbance cap exception is requested in an area that has met one of the adaptive management thresholds, no exceptions to the disturbance cap at the project scale would be considered until the causal factor analysis is completed and cause identified and corrected unless the disturbance is needed for the protection of human life and safety. d. Disturbance cap exceptions (either Project or HAF fine-scale) will be tracked and considered in cumulative analyses for any proposed development within an appropriate biological area. All requests for the use of compensatory mitigation to exceed the disturbance cap should be reviewed by the technical team for likelihood of success and efficacy of offsetting impacts to the affected habitats and associated populations.

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(see above)	*(see above)*	*(see above)*	e. There would be no exceptions to the 3% PHMA disturbance cap at the **HAF fine-scale** in any state unless: i. disturbance is needed for the protection of human life and safety, as concurred by the State Director. f. In the event of a conflict between the project scale and HAF fine scale disturbance caps, the Authorized Officer may consider and grant an exception to the disturbance cap at the HAF fine-scale if, in coordination with the appropriate state agency, it is determined that the impact to GRSG of the habitat disturbance resulting in the disturbance cap being met is better assessed at the project scale. g. Apply the disturbance cap to the extent consistent with applicable law and valid existing rights.
Density Cap			
MA-SSS-3: C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Energy and mining facilities to which this action applies are: • Oil and gas wells and development facilities, • Coal mines, • Wind towers, • Solar fields, • Geothermal wells/developments, and • Active locatable, leasable, and saleable developments.	**MA-SSS-3:** C- Density of Energy/Mining Facilities Subject to applicable laws, including the Mining Law of 1872, and applicable regulations, and valid existing rights , if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.); however, the density cap may be exceeded if a project is on non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA), or if the process identified in MA-SSS-3B determines the project will improve the condition of GRSG habitat at the proposed project analysis area or within the PHMA where the project is located through analysis of site-specific GRSG habitat and population information and project design elements. Energy and mining facilities to which this action applies are: • Oil and gas wells and development facilities, • Coal mines, • Wind towers, • Solar fields, • Geothermal wells/developments, and • Active locatable, leasable, and saleable developments.	No change (same as 2019).	Same as 2019.
PREDATION			
N/A	**N/A**		Objective: Reduce predation from increased numbers of predators resulting from anthropogenic disturbance and habitat loss and function.

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MA-SSS-3: D- Predation In PHMA, eliminate or minimize external food sources for corvids, particularly dumps, or waste transfer facilities. Apply best management practices (BMP) to development activities to reduce opportunities for GRSG predators (e.g., limiting food sources, nest/perches deterrents, and road kill). Apply habitat management practices (e.g. grazing management and vegetation treatments) that decrease the effectiveness of predators. Collaborate with applicable government entities to implement programs to control predator populations of GRSG (e.g., ravens, red fox, badgers, and raccoons).	**MA-SSS-3:** D- Predation In PHMA, eliminate or minimize external food sources for corvids, particularly dumps, or waste transfer facilities. Apply best management practices (BMP) to development activities to reduce opportunities for GRSG predators (e.g., limiting food sources, nest/perches deterrents, and road kill). Apply habitat management practices (e.g. grazing management and vegetation treatments) that decrease the effectiveness of predators. When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season). Efforts by other agencies to minimize impacts from predators on the GRSG should be supported and encouraged where needs have been documented. Collaborate with applicable government entities to implement programs to control predator populations of GRSG (e.g., ravens, red fox, badgers, and raccoons).	Completely revised – revised by rangewide.	Management Action 1: Apply minimization measures and BMPs to new, existing, and renewal of authorizations and activities to minimize threats from predators shown to pose a threat to GRSG, consistent with applicable law. This includes, but is not limited to stopping, slowing, and/or discouraging the incursion of predators, increased levels of predators, or predators expanding into new areas. Minimization measures and BMPs include, but are not limited to, the following: a. Limit the footprint for all proposed projects to the smallest area necessary to achieve the project objectives in order to reduce habitat loss. b. Place project components within existing disturbance areas whenever possible to minimize habitat loss. c. Eliminate or minimize external food resources from anthropogenic sources (e.g., trash resources from human activities, road killed animals, carcass dumps). d. Reduce or prevent opportunities for raven and raptor perching and nesting through such measures as nest/perch deterrents and regular maintenance of the nest/perch deterrents. Management Action 2: For authorizations that require expanded, new, renewal, or non-routine maintenance of energy, mining, or transmission related infrastructure projects as identified in Table 3-4 in **Appendix 3**, Greater Sage-grouse Monitoring Framework) in PHMA and IHMA, the project proponent is required to submit a predator subsidy management plan (plan) to minimize influx and support of predators as a result of the project. (Refer to Glossary for definition of "non-routine maintenance".) The requirement to prepare a plan could be waived as a result of site-specific circumstances and with State Director concurrence. The plan shall be coordinated with state and Federal agencies (e.g., USFWS and APHIS) as appropriate. The plan will: a. Outline how the project will be designed to minimize threats to GRSG beyond the natural range of variability from predators; b. Describes project design features to reduce or eliminate predator subsidies (e.g., reducing raven and raptor perching and nesting by burying powerlines, removing trash food subsidies, minimizing infrastructure, locating any necessary structures out of line of site of breeding and nesting habitat, using tubular non-branching material for structures); c. Describe and outline the coordination and concurrence with state and Federal agencies, if appropriate (e.g., USFWS, APHIS). The project proponent may participate in non-lethal control of predators (e.g., removal of raven nests before eggs are present) with the written consent and permits from the appropriate agency and as determined at the site-specific analysis; d. Include a monitoring strategy to assess efficacy of the predator subsidy management plan and GRSG population response.

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(see above)	*(see above)*	*(see above)*	Management Action 3: The BLM will collaborate with appropriate state agencies, other landowners, federal agencies (e.g., USFWS, APHIS), and Tribal governments, as appropriate and consistent with BLM policy, in their efforts to minimize impacts from predators on GRSG, including providing needed authorizations to support predator management actions. Consistent with the current State of Utah GRSG plan, the BLM will work with the applicable agencies to develop a Memorandum of Understanding (MOU) to address and reduce conflicts with ravens and other native and non-native predators throughout GRSG habitat in Utah.
NOISE RESTRICTIONS			
MA-SSS-3: E- Noise Restrictions: In PHMA, limit noise from discrete anthropogenic disturbances, whether during construction, operation, or maintenance, to not exceed 10 decibels above ambient sound levels (as available at the signing of the GRSG RMPA ROD or as first measured thereafter) at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting). Support the establishment of ambient baseline noise levels for PHMA habitat area leks. Limit project related noise in other PHMA habitats and seasons where it will be expected to reduce functionality of habitats that support associated GRSG populations. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate measures will be implemented where necessary to minimize potential for noise impacts on PHMA GRSG population behavioral cycles.	**MA-SSS-3:** E- Noise Restrictions: No changes made.	No change (same as 2015).	**MA-SSS-3:** E-Noise Restrictions Same as 2015.
TALL STRUCTURES			
MA-SSS-3: F- Tall Structure Restrictions: In PHMA, limit the placement of permanent tall structures within GRSG breeding and nesting habitats. For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors and ravens) that are naturally absent, or that decreases the use of an area by GRSG. A determination as to whether something is considered a tall structure will be made based on local conditions such as existing vegetation or topography.	**MA-SSS-3:** F- Tall Structure Restrictions: No changes made.	No change (same as 2015).	**MA-SSS-3:** F- Tall Structure Restrictions: Same as 2015.

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SEASONAL RESTRICTIONS			
MA-SSS-3: G- Seasonal Restrictions: In PHMA, in coordination with the appropriate State of Utah agency, apply seasonal restrictions during the period specified below to manage discretionary discrete anthropogenic disturbances and uses on public lands to prevent disturbance to GRSG populations and habitat during seasonal life cycle periods as follows: • In breeding (leks), nesting and early brood-rearing habitat from Feb 15 – Jun 15 • In brood rearing habitat from Apr 15 – Aug 15 • In winter habitat from Nov 15 – Mar 15 Specific time and distance determinations will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring and long and/or heavy winter) in order to better protect GRSG, in coordination with the appropriate State of Utah agency.	**MA-SSS-3:** G- Seasonal Restrictions: No changes made.	No change (same as 2015).	**MA-SSS-3:** G- Seasonal Restrictions: Same as 2015.
BUFFERS			
MA-SSS-3: H- Buffers: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B, Applying Lek-Buffer Distances.	**MA-SSS-3:** H- Buffers: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B, Applying Lek-Buffer Distances.	No change (same as 2019).	**MA-SSS-3:** H- Buffers: Same as 2019.
REQUIRED DESIGN FEATURES			
MA-SSS-3: I- Required Design Features/Best Management Practices: In PHMA, apply the RDFs from the applicable sections identified in Appendix C, Required Design Features, when authorizing/permitting site-specific activities/projects for wildland fire management actions, travel and transportation, lands and realty, fluid minerals, nonenergy leasable minerals, coal, mineral materials, and locatable minerals (consistent with applicable law). The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable; An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat.	**MA-SSS-3:** I- Required Design Features/Best Management Practices: No changes made.	No change (same as 2015).	Same as 2015.

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MA-SSS-4: In PHMA and in adjacent opportunity areas, maintain, improve and restore GRSG habitat to support GRSG populations and to maintain or enhance connectivity. Vegetation treatments will be applied to meet GRSG habitat objectives and provide additional GRSG habitat, unless there is a conflict with Utah prairie dog, where the landscape will be managed for both species. • PHMA boundaries may be adjusted to include additional restored GRSG habitat and habitat identified during survey or inventory work. Changes to maps and associated management will occur through the appropriate BLM planning processes (e.g., plan maintenance or plan amendment), as described in Appendix K.	No changes made.	No change (same as 2015).	Same as 2015.
MA-SSS-5: In GHMA, apply the following management to meet the objective of a net conservation gain for discretionary actions that can result in habitat loss and degradation:	No similar action.	Completely revised –See rows below.	**MA-SSS-5:** In GHMA, apply the following management for discretionary actions that can result in habitat loss and degradation:
MA-SSS-5: A- Existing Management: Implement GRSG management actions included in the existing RMPs and project-specific mitigation measures associated with existing decisions.	No similar action.	Completely revised – revised by statewide.	A- Existing Management: Implement GRSG management actions included in the existing RMPs and project specific mitigation measures associated with existing decisions.
MA-SSS-5: B- Net Conservation Gain: In all GRSG habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog. Mitigation will be conducted according to the mitigation framework contained in Appendix F.	No similar action.	Completely revised – revised by rangewide and statewide.	B- Mitigation: Refer to Mitigation section in MA-SSS-3**.**
MA-SSS-5: C- Buffers: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B.	No similar action.	Completely revised – revised by statewide (update to 2019 buffer appendix).	C- Buffers: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage- Grouse – A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B, Applying Lek-Buffer Distances (Utah 2019 Approved RMP Amendment).

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D- Required Design Features/Best Management In GHMA, apply the fluid mineral RDFs that are associated with GHMA identified in Appendix C when authorizing/permitting site-specific fluid mineral development activities/projects. The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat.	No similar action.	Completely revised – revised by statewide (same as 2015).	D- Required Design Features/Best Management Practices: In GHMA, apply the fluid mineral RDFs that are associated with GHMA identified in Appendix C (Utah 2015 Approved RMP Amendment) when authorizing/permitting site-specific fluid mineral development activities/projects. The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level, once the project location and design are known. Because of site specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat.
MA-SSS-6 Sage-Grouse Management Outside PHMA/GHMA Proposed projects within State of Utah Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on GRSG and implement measures to mitigate impacts when preparing site-specific planning and environmental compliance documents. Outside of PHMA, prior to site-specific authorizations, the BLM will evaluate habitat conditions and may require surveys to determine if the project area contains GRSG habitat (FLPMA, 43 United States Code (USC) 1701 Sec. 201 (a); BLM Manual 6840.04 D3; BLM-M-6840.04 E2). Surveys will be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in existing sagebrush. If an area is determined to be GRSG habitat (e.g., nesting, brood-rearing, winter, transition), mitigation will be considered as part of the project level NEPA analysis and will be attached as conditions of approval to new discretionary actions, if deemed necessary to protect the habitat (BLM Manual 6840.04 D 5). Measures that may be considered include those identified in Appendix C. Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to GRSG movement; these areas may be used by GRSG to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species.	**MA-SSS-6** Sage-Grouse Management Outside PHMA Outside PHMA, implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments. Proposed projects within State of Utah Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on GRSG and may implement measures to mitigate impacts on GRSG populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents. Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to GRSG movement; these areas may be used by GRSG to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species. Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B from a lek that is located in PHMA, portions of State of Utah opportunity areas will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will be avoided, applying avoidance criteria for noise and tall structures. Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B from occupied GRSG leks	Partially revised – revised by state specific (See new actions in state specific tables – GHMA in UT).	**MA-SSS-6**: Sage-Grouse Management Outside PHMA Outside PHMA, implement GRSG management actions included in the RMPs and project-specific mitigation measures associated with decisions that predated the 2015 amendments. Proposed projects within State of Utah SGMA and USFWS PACs, as well as adjacent to PHMA outside these areas, will consider impacts on GRSG and may implement measures to mitigate impacts on GRSG populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents. Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to GRSG movement; these areas may be used by GRSG to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species. Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B (Utah 2019 Approved RMP Amendment) from a lek that is located in PHMA, portions of State of Utah opportunity areas will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will be avoided, applying avoidance criteria for noise and tall structures.

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Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4) within 4 miles of a lek that is located in PHMA will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will be avoided, applying avoidance criteria for noise and tall structures. Do not site wind energy development in opportunity areas within 5 miles from occupied GRSG leks that are in PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new GRSG habitat. Evaluate conditions in the treated area to determine if it is providing habitat for GRSG and if additional measures are necessary to protect the habitat.	that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunities areas will impact lek persistence within PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new GRSG habitat. Evaluate conditions in the treated area to determine if it is providing habitat for GRSG and if additional measures are necessary to protect the habitat. Outside of PHMA, provide that acres of GRSG seasonal habitat (based on best available maps, then confirmed to be regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements through coordination with the appropriate State of Utah agency and through on-the-ground information) that is lost to habitat degradation actions (Appendix C, Table C.2 of the 2015 ROD/Approved RMPA) are replaced by creating/improving Greater Sage-Grouse habitat within PHMA.	*(see above)*	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B (Utah 2019 Approved RMP Amendment) from active GRSG leks that are in PHMA, if the lek buffer analysis as identified in Appendix B (Utah 2019 Approved RMP Amendment) shows that siting wind energy development in opportunities areas will impact lek persistence within PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new GRSG habitat. Evaluate conditions in the treated area to determine if it is providing habitat for GRSG and if additional measures are necessary to protect the habitat. Outside of PHMA, provide that acres of GRSG seasonal habitat (based on best available maps, then confirmed to be regularly used by GRSG Grouse to sustain one or more seasonal habitat requirements through coordination with the appropriate State of Utah agency and through on-the-ground information) that is lost to habitat degradation actions (Appendix C, Table C.2 of the Utah 2015 ROD/Approved RMP Amendment) are replaced by creating/improving GRSG habitat within PHMA.
ADAPTIVE MANAGEMENT			
N/A	**N/A**	New Objective	**Objective:** Address unanticipated negative impacts to GRSG from changes in habitat conditions before consequences become severe or irreversible.
MA-SSS-7 <u>Adaptive Management</u> This plan establishes soft and hard triggers for both GRSG populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter. If monitoring indicates the soft-trigger is met, the BLM will determine if there is a specific cause or causes that are contributing to the decline. If it is determined that the decline is related to a natural population variation, no specific management actions will be required. However, if BLM management actions are determined to cause or contribute to the decline, the BLM manager will apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. If monitoring indicates the hard trigger is met, a set of specific management actions from the BLM Proposed Plan will immediately be replaced with or adjusted by different management actions in the area where the trigger has been met. Table I.1 of Appendix I identifies the management actions from the BLM Proposed Plan, and the corresponding new management actions that will be immediately implemented to the specific area in the event a hard trigger is met. In addition to	**MA-SSS-7** <u>Adaptive Management</u> This plan establishes soft and hard triggers for both GRSG populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management. The hard and soft trigger data will be analyzed annually. If monitoring indicates the soft-trigger is met, the BLM will review available and pertinent data, in coordination with GRSG biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines within 6 months of identifying that a trigger has been met. If it is determined that the decline is related to a natural population variation, no specific management actions will be required; however, if BLM management actions are determined to cause or contribute to the decline, the BLM will work with the appropriate State of Utah agency and public land users to identify and apply management to slow down or stop the population decline. Such measures would be applied by the BLM manager within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. Such measures could also include other management actions which may require the need to amend the RMP to address the situation and modify management. If monitoring indicates the hard trigger is met, the BLM will review available and pertinent data, in coordination with GRSG biologists from multiple agencies including the appropriate State of Utah agency,	Completely revised – revised by rangewide.	The BLM will implement adaptive management per the following Management Action to inform appropriate responses to the loss or degradation of GRSG habitat on BLM-administered lands. Where the State has an adaptive management process as part of the State's GRSG management plan, program, policy, regulation, or authority, the BLM will participate in and implement the most recent State adaptive management process, consistent with the framework outlined in Appendix 9. If a State is developing an adaptive management process, the BLM will participate in developing that process and, as appropriate, any state-level interagency adaptive management team. The BLM must consider the best available information about GRSG habitat and population status, which includes the States' data and other available science. States have ownership over managing GRSG populations and therefore lead the collection of GRSG population monitoring data and determination of population status (e.g., increasing, decreasing, or stable). The States' population monitoring is important for informing effective GRSG habitat management on BLM-administered lands. In coordination with State GRSG authorities and state-level interagency adaptive management teams, BLM will produce an annual summary of GRSG habitat conditions and population status, adaptive management thresholds, and any associated adaptive management responses and decisions for BLM-administered lands. This will be completed by a mutually agreed-upon date. BLM's annual summaries will include population status input and recommendations from State GRSG authorities. BLM will coordinate with State GRSG authorities regarding management

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these specific changes, the BLM will review available and pertinent data for the area, in coordination GRSG biologists from multiple agencies including the appropriate State of Utah agency, USFWS, and NRCS, to determine the causal factor(s) and implement a corrective strategy. The final strategy associated with a hard trigger being met will be the changes identified in Table I.1 of Appendix I, and may also include the need to further amend or revise the RMP to address the situation and modify management accordingly, for the area where the trigger was met.	USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factor(s) and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in Table I.1 of Appendix I that address the causal factor, and could also include other management actions, which may be require the need to amend the RMP to address the situation and modify management. If determining the causal factor and development of the corrective strategy is not completed within 6 months of documenting that the trigger has been met, all the plan level responses identified in Table I.1 will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that do not address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in Table I.1, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed. The management identified in the corrective strategy would be implemented until ten-year population trends reflect natural fluctuations anticipated for the area. The BLM would determine the area reflects natural fluctuations in coordination with GRSG biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon determination, the management would revert to the RMPA. If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a GRSG population for which management should be prioritized. For any area that has met a soft or hard trigger, the BLM, the appropriate State of Utah agency, and other members of the technical team will annually review monitoring data regarding population and habitat trends to verify that management actions implemented to mitigate declines are being successful. If monitoring indicates continued declines, the causal factor analysis will be reviewed, updated if needed, and applicable additional management would be identified and implemented.	*(see above)*	decisions made in response to adaptive management thresholds and subsequent causal factor analyses and will make decisions for the management of BLM managed surface lands and mineral estate. If no adaptive management thresholds are identified during a given year, an annual review of habitat and population status by state-level interagency adaptive management teams (including State GRSG authorities) is nonetheless encouraged. Consistent with State GRSG adaptive management processes and the Federal Land and Policy Management Act ("FLPMA"), the BLM will implement GRSG adaptive management framework outlined in **Appendix 9** in coordination with state-level interagency adaptive management teams.[1]
VEGETATION (VEG)	***VEGETATION (VEG)***	—	
Objectives:	**Objectives:**	—	
Objective VEG-1: In SFA and PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions; exceptions to this objective shall be made where GRSG habitat and Utah prairie dog occur on the same landscape, which will be managed for both species. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).	**Objective VEG-1:** In PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions; exceptions to this objective shall be made where GRSG habitat and Utah prairie dog occur on the same landscape, which will be managed for both species. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).	No change (same as 2019).	Same as 2019.

[1] The Federal Land Policy and Management Act (FLPMA) requires the BLM, to "resolv[e], to the extent practical, inconsistencies between Federal and non-Federal Government plans," and achieve consistency with State and local plans to the maximum extent that the BLM finds to be consistent with the laws governing public lands. 43 USC 1712(c)(9). See also 43 CFR 1610.3-1.

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Management Actions (MA):	**Management Actions (MA):**	—	
MA-VEG-1: In PHMA, where necessary to meet GRSG habitat objectives, treat areas to maintain and expand healthy GRSG habitat (e.g., conifer encroachment areas and annual grasslands). In PHMA, prioritize implementation of restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (e.g., proximity to existing GRSG populations, ecological site potential, and resistance and resilience), documented in Appendix H, Fire and Invasives Assessment Tool. In PHMA, prioritize restoration in seasonal habitats that are identified as the limiting factor for GRSG distribution and/or abundance. Apply seasonal restrictions to avoid treating areas during seasons of use, as needed, when implementing vegetation treatments (see MA-SSS-3G). In PHMA, avoid sagebrush reduction treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population, or unless the treatment is for Utah prairie dog recovery where the needs of both species will be addressed on the landscape. Coordinate with the appropriate State of Utah agency and the USFWS prior to conducting sagebrush treatment projects within nesting and winter habitat. Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local GRSG working groups, and other federal, state, county, and private organizations shall be solicited and considered in development of restoration projects. In PHMA, implement project design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Examples include, but are not limited to the following: • Review of available plant species and their adaptation to the site when developing seed mixes. • The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, etc. • Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques. • Use of site preparation techniques that retain existing desirable vegetation. • Use of "mother plant" techniques or planting of satellite populations of desirable plants to serve as seed sources. • The need for post-treatment control of non-native annual grass and other invasive species. Upon completion of vegetation treatments, monitor and manage the project area to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance treatments.	**MA-VEG-1**: In PHMA, where necessary to meet GRSG habitat objectives, treat areas to maintain and expand healthy GRSG habitat (e.g., conifer encroachment areas and invasive annual grasslands). In PHMA, prioritize implementation of restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (e.g., proximity to existing GRSG populations, ecological site potential, and resistance and resilience), documented in Appendix H, Fire and Invasives Assessment Tool. In PHMA, prioritize restoration in seasonal habitats that are identified as the limiting factor for GRSG distribution and/or abundance. Apply seasonal restrictions to avoid treating areas during seasons of use, as needed, when implementing vegetation treatments (see MA-SSS-3G). In PHMA, avoid sagebrush reduction treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population, or unless the treatment is for Utah prairie dog recovery where the needs of both species will be addressed on the landscape. Coordinate with the appropriate State of Utah agency and the USFWS prior to conducting sagebrush treatment projects within nesting and winter habitat. Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local GRSG working groups, and other federal, state, county, and private organizations shall be solicited and considered in development of restoration projects. In PHMA, implement project design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Examples include, but are not limited to the following: • Review of available plant species and their adaptation to the site when developing seed mixes. • The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, etc. • Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques. • Use of site preparation techniques that retain existing desirable vegetation. • Use of "mother plant" techniques or planting of satellite populations of desirable plants to serve as seed sources. • The need for post-treatment control of non-native annual grass and other invasive species. Upon completion of vegetation treatments, monitor and manage the project area to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance treatments.	No change (same as 2019).	Same as 2019.

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MA-VEG-2: Remove conifers encroaching into sagebrush habitats, in a manner that considers tribal cultural values. When conducting conifer treatments: • Prioritize treatments closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase I or phase II. • Treat areas in late Phase II or Phase III condition to create movement corridors, connect habitats, or to break up continuous, hazardous fuels and reduce the potential for catastrophic fire. • Prioritize methods to reduce conifer canopy cover to those that maintain the understory vegetation as the preferred treatment methods (e.g., mechanical, lop and scatter). • Require that vegetation treatments conducted within 0.6 miles of a lek include an objective of reducing conifer, where technically feasible, to less than 5 percent canopy cover, with preference for complete removal. • Include stipulations to avoid removing old-growth pinyon/juniper stands (e.g., Tausch et al. 2009; Miller et al. 1999). Use of site-specific analysis and tools like the Vegetation Dynamics Development Tool and the fire and invasives assessment tool report (Chambers et al. 2014) will help refine the location for specific areas to be treated.	**MA-VEG-2:** Remove conifers encroaching into sagebrush habitats, in a manner that considers tribal cultural values. When conducting conifer treatments: • Prioritize treatments closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase I or phase II. • Treat areas in late Phase II or Phase III condition to create movement corridors, connect habitats, or to break up continuous, hazardous fuels and reduce the potential for catastrophic fire. • Prioritize methods to reduce conifer canopy cover to those that maintain the understory vegetation as the preferred treatment methods (e.g., mechanical, lop and scatter). • When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season). • Require that vegetation treatments conducted within 0.6 miles of a lek include an objective of reducing conifer, where technically feasible, to less than 5 percent canopy cover, with preference for complete removal. • Include stipulations to avoid removing old-growth pinyon/juniper stands (e.g., Tausch et al. 2009; Miller et al. 1999). Use of site-specific analysis and tools like the Vegetation Dynamics Development Tool and the fire and invasives assessment tool report (Chambers et al. 2014) will help refine the location for specific areas to be treated.	No change (same as 2019).	Same as 2019.
MA-VEG-3: In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase amount of edge and cover within that edge.	**MA-VEG-3:** In PHMA manage riparian areas for proper functioning condition. In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase amount of edge and cover within that edge.	No change (same as 2019).	Same as 2019.
MA-VEG-4: In PHMA, include GRSG habitat objectives in restoration/treatment projects. Include short-term and long-term habitat conditions in treatment objectives, including specific objectives for the establishment of sagebrush cover and height, as well as cover and heights for understory perennial grasses and forbs necessary for GRSG seasonal habitats (see Objective SSS-3). Make meeting the GRSG objectives for the restoration/treatment project one of the primary priorities for the project and subsequent land uses, recognizing that managing for other special status species may result in treatment objectives that may not meet GRSG seasonal habitat objectives (e.g., winter habitat cover requirements versus creation of Utah prairie dog habitat). Where GRSG habitat overlaps with that of federally listed threatened or endangered species (e.g., Utah prairie dogs), coordinate with species-specific experts to develop conservation and recovery objectives and allow habitat treatments that will benefit both species.	No changes made.	No change (same as 2015).	Same as 2015.

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MA-VEG-5: In PHMA, prioritize the use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used as long as they support GRSG habitat objectives. Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, should be the principle objective for rehabilitation efforts.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-6: In PHMA, design post restoration management to ensure long term persistence. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits GRSG, as well as monitoring and maintaining the treated area.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-7: In PHMA, limit commercial seed or live plant collection to levels that ensure long-term maintenance of the GRSG habitat objectives. Locations, species allowed for collection, and limits on the amounts to be collected will be developed on a case-by-case basis following environmental review of annual site-specific conditions. Commercial collection during sensitive seasonal periods (see MA-SSS-3G) will include mitigation, developed to reflect the site-specific conditions on the ground, that could include, but is not necessarily limited to, restrictions on the timing and method of collection activities, limiting the number of individuals collecting, providing portions of collected seeds for use in local restoration projects, etc.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-8: In PHMA, allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed from areas as close as possible to where the seed will be used to capture local adaptations.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-9: In PHMA, diversify the perennial grass and forb components through additional seeding in areas where historical seedings (e.g., crested wheatgrass) have been recolonized by sagebrush.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-10: Follow the applicable and technically feasible RDFs in Appendix C for vegetation projects/activities (fuels management) at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat.	No changes made.	No change (same as 2015).	Same as 2015.

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MA-VEG-11: In PHMA, design post Emergency Stabilization and Rehabilitation/Burn Area Emergency Rehabilitation management to ensure long term persistence of seeded or pre-burn native plants. This may require temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain the desired condition of Emergency Stabilization and Rehabilitation projects to benefit GRSG (Eiswerth and Shonkwiler 2006). Monitor and control invasive vegetation post-wildfire for at least 3 years.	No changes made.	No change (same as 2015).	Same as 2015.
Integrated Invasive Species Management **MA-VEG-12**: In PHMA, integrated Vegetation Management will be used to control, suppress, and eradicate noxious and invasive species per BLM Handbook H-1740-2.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-13: In PHMA, treatments of Mormon cricket outbreaks will be collaborated with partners at the federal, state, and local levels to maintain and enhance GRSG habitats.	No changes made.	No change (same as 2015).	Same as 2015.
MA-VEG-14: Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species.	No changes made.	No change (same as 2015).	Same as 2015.
FIRE AND FUELS MANAGEMENT (FIRE)	***FIRE AND FUELS MANAGEMENT (FIRE)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-FIRE-1: In collaboration with the USFWS and relevant state agencies, complete and maintain GRSG Landscape Wildland Fire and Invasive Species Habitat Assessments to prioritize at risk habitats, and identify fuels management, preparedness, suppression and restoration priorities necessary to maintain sagebrush habitat to support interconnecting GRSG populations. These assessments and subsequent assessment updates will also be a collaborative effort to take into account other GRSG priorities identified in this plan. Appendix H describes a minimal framework example and suggested approach for this assessment. Implementation actions will be tiered to the local GRSG Landscape Wildland Fire and Invasive Species Assessment, using best available science related to the conservation of GRSG. In collaboration with USFWS and relevant state agencies, BLM planning units will identify annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments. Annual treatment needs will be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of GRSG. Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.	No changes made.	No change (same as 2015).	Same as 2015.

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Fuels Management **MA-FIRE-2**: Follow the applicable and technically feasible RDFs in Appendix C for fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat.	No changes made.	No change (same as 2015).	Same as 2015.
MA-FIRE-3: In PHMA, fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, or protect GRSG habitat. • In collaboration with USFWS and relevant state agencies, BLM planning units with large blocks of GRSG habitat will develop, using the assessment process described in Appendix H, a fuels management strategy which considers an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and GRSG ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate. When developing this strategy, planning units will consider the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken. • Use green strips and/or fuel breaks to protect GRSG habitat from fire events. • When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops). • Avoid constructing fuel breaks through large areas of intact GRSG habitat, unless the associated NEPA document demonstrates a biological need for the fuel break to maintain or protect habitat for the GRSG population. Coordinate with the appropriate State of Utah agency and the USFWS prior to constructing fuel breaks within nesting and winter habitat. • Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables. • Remove encroaching conifer stands as a fuels management tool, where environmental review documents it protects or improves GRSG habitat. • Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success for native seed availability is low, desirable non-native seeds may be used	**MA-FIRE-3:** In PHMA, fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, or protect GRSG habitat. • In collaboration with USFWS and relevant state agencies, BLM planning units with large blocks of GRSG habitat will develop, using the assessment process described in Appendix H, a fuels management strategy which considers an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and GRSG ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate. When developing this strategy, planning units will consider the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken. • Use green strips and/or fuel breaks to protect GRSG habitat from fire events. • When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops). • Avoid constructing fuel breaks through large areas of intact GRSG habitat, unless the associated NEPA document demonstrates a biological need for the fuel break to maintain or protect habitat for the GRSG population. Coordinate with the appropriate State of Utah agency and the USFWS prior to constructing fuel breaks within nesting and winter habitat. • Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, targeted livestock grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables. • Remove encroaching conifer stands as a fuels management tool, where environmental review documents it protects or improves GRSG habitat. • Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success for native seed availability is low, desirable non-native seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. When	No change (same as 2019).	Same as 2019.

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to meet GRSG habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks. • Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance actions. Control invasive vegetation post-treatment. • Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present (see MA-SSS-3G). In PHMA, avoid sagebrush reduction fuels treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population, or unless the treatment is for Utah prairie dog recovery where the needs of both species will be addressed on the landscape. Treatments in winter habitat should be designed to maintain sagebrush, especially tall sagebrush (sagebrush capable of standing above heavier than normal snowfall), which will be available to GRSG above snow during a severe winter, considering the needs of Utah prairie dog recovery. Prior to conducting fuels treatments in winter habitat, coordinate with the appropriate State of Utah agency and the USFWS to design the treatment to strategically reduce wildfire risk around or in the winter habitat.	reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks. • Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance actions. Control invasive vegetation post-treatment. • Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present (see MA-SSS-3G). In PHMA, avoid sagebrush reduction fuels treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population, or unless the treatment is for Utah prairie dog recovery where the needs of both species will be addressed on the landscape. Treatments in winter habitat should be designed to maintain sagebrush, especially tall sagebrush (sagebrush capable of standing above heavier than normal snowfall), which will be available to GRSG above snow during a severe winter, considering the needs of Utah prairie dog recovery. Prior to conducting fuels treatments in winter habitat, coordinate with the appropriate State of Utah agency and the USFWS to design the treatment to strategically reduce wildfire risk around or in the winter habitat.	*(see above)*	*(see above)*
MA-FIRE-4: If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address: • why alternative techniques were not selected as a viable options; • how GRSG goals and objectives will be met by its use; • how the COT Report objectives will be addressed and met; • a risk assessment to address how potential threats to GRSG habitat will be minimized. Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire may be used to meet specific fuels objectives that will protect GRSG habitat in PHMA (e.g., creation of fuel breaks that will disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities), as well as managing the landscape for GRSG in concert with Utah prairie dog. Prescribed fire in known winter range shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat will need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.	No changes made.	No change (same as 2015).	Same as 2015.

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MA-FIRE-5: In PHMA, during fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	No similar action.	No change (same as 2015).	Same as 2015.
Pre-Suppression **MA-FIRE-6**: Follow the applicable and technically feasible RDFs in Appendix C for fire and fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • A specific RDF will provide no additional protection to GRSG or its habitat. Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for GRSG habitat. Develop wildfire prevention plans that explain the resource value of GRSG habitat and include fire prevention messages and actions to reduce human-caused ignitions.	No changes made.	No change (same as 2015).	Same as 2015.
Suppression **MA-FIRE-7:** Follow the applicable and technically feasible RDFs in Appendix C for fire and fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity: • A RDF is documented to not be applicable to the site-specific conditions of the project/activity; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; A specific RDF will provide no additional protection to GRSG or its habitat.	No changes made.	No change (same as 2015).	Same as 2015.

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MA-FIRE-8: The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. GRSG habitat in PHMA will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG across the range of GRSG habitat consistent with LUP direction. PHMA will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the GRSG Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H. In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	**MA-FIRE-8**: The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. GRSG habitat in PHMA will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG across the range of GRSG habitat consistent with LUP direction. PHMA will be viewed as more valuable than non-PHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth outside and adjacent to PHMA polygons as well. These priority areas will be further refined following completion of the GRSG Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H. Outside PHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	Partially revised – revised to state specific.	Same as 2015.
MA-FIRE-9: Within acceptable risk levels use a full range of fire management strategies and tactics, including the management of wildfires to achieve resource objectives, across the range of GRSG habitat consistent with LUP direction. In PHMA, burnout operations areas should be avoided by constructing direct fire lines, whenever safe and practical to do so.	No changes made.	No change (same as 2015).	Same as 2015.
Livestock Grazing/Range Management (LG)	***Livestock Grazing/Range Management (LG)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
N/A	N/A		**Objective (RM-1)**: Manage livestock grazing in GRSG habitat a manner that meets or makes progress toward meeting Utah Land Health Standard (LHS) 3 (*"desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved")* and applies the guideline that addresses "restoring, maintaining, or enhancing habitats of...special status species to promote their conservation" (43 CFR Part 4180.2(e)(9) or subsequent changes to regulations or policy).
MA-LG-1: PHMA and GHMA will be available for livestock grazing (Figure 2-3, Livestock Grazing [Appendix A]). Active animal unit months (AUMs) for livestock grazing will be 329,521 on BLM lands. Make adjustments to permitted AUMs consistent with regulation and the remaining grazing direction. In addition, on an annual basis livestock numbers and the season of use can be adjusted within the terms and conditions of the permit. Make adjustments to permitted use and annual adjustments to levels of livestock use consistent with regulation and the direction identified below where livestock grazing is identified as a causal factor to not meeting standards or habitat objectives.	No similar action. [Meaning the presence of GRSG habitat management areas does not affect the determination of whether or not an area is available for livestock grazing or the active AUMs.]	Completely revised – revised by rangewide.	**Allocation (RM-1)**: The presence of GRSG HMAs would not affect whether an area is available for livestock grazing. During livestock grazing authorization renewals, Allotment Management Plan (or its functional equivalent) development, or other appropriate implementation-level planning, BLM will follow all applicable livestock grazing regulations including 43 CFR Subpart 4120 – Grazing Management and 43 CFR 4180.2 Standards and Guidelines for Grazing Administration or any subsequent revisions, and the best management practices and design features in **Appendix 5**.

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MA-LG-2: The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in SFA first followed by PHMA outside SFA. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (ex., fire) and legal obligations.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD SEE BMPs in **Appendix 5**, Section 5.1.2, Bullet 1
MA-LG-3: In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for landscape level approaches to habitat improvement. Manage unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use as a single unit that will have the same management as the public lands.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD SEE BMPS in **Appendix 5**, Section 5.1.1
MA-LG-4: Evaluate Utah's Rangeland Health Standards and process grazing permits. Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards where livestock grazing is identified as a causal factor and that have the best opportunities for conserving, enhancing or restoring habitat for GRSG. • Use ecological site descriptions and/or other appropriate information to determine the desired plant community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.	No similar action.	Completely revised – revised by rangewide.	**RM-1**: During the Land Health Assessment (LHA) process, use the criteria identified in the Sage-Grouse HAF (BLM-TR-6710-1 - Stiver et al. 2015 – as revised) and other BLM approved methodology to provide multiple lines of evidence (consistent with BLM Manual 1283) for determining whether vegetation structure, condition, and composition are meeting or making significant progress towards meeting the LHS Utah Standard 3. This includes referencing appropriate Ecological Site Descriptions (ESD), associated State and Transition Model (STM) and existing ecological condition information. For GRSG, the standard would generally be met when vegetation conditions provide for suitable GRSG habitat at the HAF site-scale (refer to **Table 4-1, Appendix 4**), based on existing ecological condition, ecological potential, and existing vegetation information. Where the LHS Utah Standard 3 (specific to GRSG) is not being met – as indicated by an unsuitable site-scale HAF assessment relative to site potential – and current livestock grazing is a significant causal factor (43 CFR Part 4180, BLM H-4180-1 or subsequent changes to regulations or policy), adjustments to livestock grazing practices and activities will be made at the authorization, allotment or activity plan level and in accordance with applicable regulations (43 CFR Part 4180.2 or subsequent changes to regulations or policy). Any adjustments to livestock grazing will be made based on current ecological potential according to ESD, associated STM, and existing ecological state.
MA-LG-5: In PHMA and GHMA, conduct land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to achieving GRSG habitat objectives (Objective SSS-3), including within wetlands and riparian areas. Prioritize land health assessments in SFA, followed by PHMA outside of the SFA. Conduct land health assessments at the watershed scale and use the GRSG habitat objectives when assessing the applicable standard in GRSG habitats.	No similar action.	Completely revised – revised by rangewide.	

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MA-LG-6: In PHMA, when livestock management practices are determined to not be compatible with meeting or making progress towards achievable habitat objectives following appropriate consultation, cooperating and coordination, implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). *Not in priority order The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will include specific management thresholds based on Table 2-2 (2015 ARMPA), Land Health Standards (43 CFR, Part 4180.2), and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal GRSG habitat requirements could include those items identified in the list above.	**MA-LG-6:** In PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards, and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). *Not in priority order When improper livestock grazing is the causal factor for not meeting or making progress towards achievable habitat objectives and Land Health Standards, the NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA will analyze multiple potential modifications (e.g., alternatives from the list above) that address the reasons for not meeting, allowing the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal GRSG habitat requirements could include those items identified in the list above.	Completely revised – revised by rangewide.	**RM-2**: In PHMA, when fully processing livestock grazing authorizations where the LHS Utah Standard 3 is not being met (specific to GRSG habitat), and current livestock grazing has been identified as a significant causal factor (43 CFR Part 4180, BLM H-4180-1 or subsequent changes to regulations or policy), the NEPA analysis must include in at least one alternative with specific thresholds and defined responses that would be included in the terms and conditions of the livestock grazing authorization if that alternative were selected. One or more defined responses will allow the Authorized Officer to consider adjustments to livestock grazing during the term of the authorization that have already been analyzed in a NEPA document. Thresholds specific to GRSG habitat would be developed to make significant progress toward fulfillment of the LHS (43 CFR Part 4180.2 or subsequent changes to regulations or policy) and maintain or move PHMA toward providing suitable GRSG habitat (e.g., **Table 4-1, Appendix 4**). Thresholds and defined responses will be designed to address the HAF assessment rating that warranted the Land Health Evaluation finding, and consider ecological site potential, and relevant locally specific conditions, and LHS.
MA-LG-7: In PHMA, during drought periods, prioritize evaluating effects of the drought relative to GRSG needs for food and cover. Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect GRSG habitat, in accordance with Instruction Memorandum 2013-094 (Resource Management During Drought), or other agency policies. Implement post-drought management to allow for vegetation recovery that meets GRSG needs.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD see **BMPs** in **Appendix 5**, Section 5.1.4
MA-LG-8: In PHMA, manage riparian areas and wet meadows for proper functioning condition.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD see **BMPs** in **Appendix 5**, Section 5.1.5
MA-LG-9: In PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by GRSG in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution). Allotments within SFA, followed by those within PHMA, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD see **BMPs** in **Appendix 5**, Section 5.1.5

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MA-LG-10: In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to GRSG habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain riparian or wet meadow vegetation and hydrology to meet GRSG needs.	**MA-LG-10:** In PHMA, manage existing and new water developments to have a neutral or beneficial effect to GRSG habitat.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD see **BMPs** in **Appendix 5**, Section 5.1.5
MA-LG-11: In PHMA, evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and GRSG habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.	No similar action.	Completely revised – revised by rangewide.	RM-3: During the livestock grazing authorization renewal process, evaluate all existing livestock management range improvements with respect to their effect on GRSG and GRSG habitat. Consider removal or modification of projects that negatively affect GRSG or GRSG habitat. Range improvements needed for management of sensitive species habitat or other sensitive resources should be maintained but consider implementing improvements in a manner less impactful to GRSG (Refer to Appendix 5 for Livestock Grazing Management Best Management Practices and Design Features).
MA-LG-12: In PHMA, ensure that vegetation treatments conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock).	No similar action.	Completely revised – revised by rangewide.	
MA-LG-13: In PHMA, evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If existing seedings provide value in conserving or enhancing GRSG habitats, then no restoration will be necessary. Assess the compatibility of these seedings for GRSG habitat during the land health assessments.	No similar action.	Completely revised – revised by rangewide.	
MA-LG-14: In PHMA, design new structural range improvements to have a neutral effect or conserve, enhance, or restore GRSG habitat through an improved grazing management system relative to GRSG objectives. Structural range improvements, in this context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	No similar action.	Completely revised – revised by rangewide.	RM-4: Range improvements are defined as any activity or program relating to rangelands which is designed to improve forage, change vegetative composition, control patterns of use, provide water, stabilize soil and water conditions and provide habitat for livestock and wildlife. Design new range improvement projects to enhance livestock distribution or management and to control the duration, timing and intensity of grazing. They may include application of new technologies such as voluntary virtual fencing. In PHMA, any new structural range improvements should be placed along existing disturbance corridors or in the least suitable habitat, to the extent practicable, and are subject to appropriate design features (Appendix 5) and NEPA.
MA-LG-15: In PHMA, evaluate existing structural range improvements to make sure they have a neutral effect or conserve, enhance or restore GRSG habitat.	No similar action.	Completely revised – revised by rangewide.	See RM-3:

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MA-LG-16: To reduce outright GRSG strikes and mortality, remove, modify or mark fences in high risk areas (Stevens et al. 2012) based on proximity to lek (e.g., within 1.2 miles of a lek), lek size, and topography, or as latest science indicates. Prioritize actions in SFA first, then PHMA. Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").	**MA-LG-16:** To reduce outright GRSG strikes and mortality, remove, modify or mark fences in high risk areas (Stevens et al. 2012) based on proximity to lek (e.g., within 1.2 miles of a lek), lek size, and topography, or as latest science indicates. Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").	Completely revised – revised by rangewide.	RM-5: Identify fences in high-risk areas in coordination with the state wildlife agency or other appropriate state authority. Priority should be given to areas - within 1.2 miles of an active lek (Christiansen 2009; Stevens 2011) - or other areas identified as important seasonal habitats or areas of GRSG concentration. Evaluate if the fence is needed and/meets BLM wildlife friendly fencing standards (BLM H 1741). If the fence is unnecessary, remove it. If the fence is needed to support management, mark fences with high visibility fence markers in high risk or important areas (Christiansen 2009; Stevens 2011). Where marking fences does not reduce fence-related GRSG mortality, modify fences. Modification could include re-routing, altering construction materials, using seasonal drop fencing, or limiting perching of predators. New fences within high-risk areas would only be authorized if at least one of the following criteria is met: a. It is consistent with the overall RMP GRSG objective; OR, b. Local terrain features shield nearby habitat or reduce the habitat importance; OR, c. The fence is constructed with high visibility markers to reduce GRSG strikes. Evaluating existing fences to assess mortality risk is recommended in all GRSG habitats.
MA-LG-17: In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	No similar action.	Completely revised – revised by rangewide.	NOT CARRIED FORWARD
MA-LG-18: At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR, Part 4110.2-3.	No similar action.	Completely revised – revised by rangewide.	Same as 2019.
WILD HORSES AND BURROS (WHB)	***WILD HORSES AND BURROS (WHB)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-WHB-1: Manage HMAs in GRSG habitat within established appropriate management level ranges to achieve and maintain GRSG habitat objectives (Objective SSS-3).	No changes made.	Completely revised – revised by rangewide.	Management Action 1: Where wild horses overlap with GRSG: a. Manage wild horse populations within the established range of Appropriate Management Levels (AML); **AND**, b. Incorporate GRSG habitat objectives into wild horse management (e.g., herd management area plans, AML) monitoring, and gather prioritization, with prioritization of such activities in PHMA, then GHMA; **AND**, c. Prioritize gathers in GRSG PHMA unless removals are necessary in other areas to address higher priority issues, including herd health impacts.

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MA-WHB-2: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are: 1. HMAs containing PHMA; 2. HMAs containing only GHMA; 3. HMAs containing sagebrush habitat outside of PHMA and GHMA mapped habitat; and HMAs without GRSG habitat.	**MA-WHB-2:** Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are: 1. HMAs containing PHMA; 2. HMAs containing sagebrush habitat outside of PHMA mapped habitat; and HMAs without GRSG habitat.	Partially revised – refer to state specific (WHB 2015 GHMA).	**MA-WHB-2:** Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are: 1. HMAs containing PHMA; 2. HMAs containing only GHMA; 3. HMAs containing sagebrush habitat outside of PHMA and GHMA mapped habitat; and HMAs without GRSG habitat.
MA-WHB-3: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts.	No changes made.	Completely revised – revised by rangewide.	**Management Action 2:** Manage wild horse herd management areas in GRSG habitat (or portions of the herd management area overlapping or within GRSG habitat) within the established AML ranges to achieve and maintain GRSG habitat objectives and achieve or make significant progress towards achieving LHS, considering the full suite of approaches to maintain AML, including fertility control and non-reproducing, or partially non-reproducing herds.
MA-WHB-4: In PHMA, assess and adjust appropriate management levels through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current appropriate management levels are not being exceeded.	No changes made.	Completely revised – revised by rangewide.	**Management Action 3:** If GRSG site-scale habitat objectives are not being met in PHMA and GHMA, evaluate AMLs and adjust, if necessary, through the NEPA process where wild horse or burro use is identified as significant causal factor to not meeting LHS, or is a factor in the area not meeting the GRSG habitat objectives.
MA-WHB-5: In PHMA, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.	No changes made.	No change (same as 2015).	Same as 2015.
MA-WHB-6: Develop or amend herd management plans to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with an emphasis placed on PHMA.	No changes made.	No change (same as 2015).	Same as 2015.
MA-WHB-7: Consider removals or exclusion of wild horses/burros during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.	No changes made.	No change (same as 2015).	Same as 2015.
MA-WHB-8: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effect on GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.	No changes made.	No change (same as 2015).	Same as 2015.
MA-WHB-9: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the wild horse and burro program.	No changes made.	No change (same as 2015).	Same as 2015.

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MINERALS RESOURCES (MR)	***MINERALS RESOURCES (MR)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-1: Allow exploration for all minerals (e.g., geophysical, trenching, drilling, etc.) within mapped occupied GRSG habitat areas that are not closed to leasing, permitting, etc., to obtain exploratory information. In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3) and GHMA (MA-SSS-5).	No changes made.	No change (same as 2015).	Same as 2015
Fluid Minerals	***Fluid Minerals***	—	***Fluid Minerals (including geothermal)***
Objectives:	**Objectives:**	—	
Objective MR-1: Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 USC 226(p) and 43 CFR, Part 3162.3-1(h).	No similar objective.	Completely revised – revised by rangewide.	**Objective:** Manage fluid mineral leasing and development (including geothermal) in GRSG habitat management areas to avoid when practicable, then minimize, and voluntarily compensate for adverse impacts to GRSG habitat to the extent required under the law and BLM jurisdiction.
Objective MR-2: Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize, and compensate for adverse impacts on the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an application for permit to drill for the lease to avoid, minimize, and compensate for impacts on GRSG or its habitat and will ensure that the best information about the GRSG and its habitat informs and helps to guide development of such federal leases.	No changes made.	Completely revised – revised by rangewide.	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-2: Manage fluid mineral leasing in PHMA as follows (Figure 2-4, Fluid Minerals [Oil and Gas] [Appendix A]) (Appendix G, Stipulations Associated with Fluid Mineral Leasing): • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 23,600 acres • open to leasing, subject to NSO stipulations: 3,229,600 acres • closed to leasing: 111,900 acres	No changes made.	Partially revised -editorial revisions to provide clarity.	**MA-MR-2:** Manage fluid mineral leasing in PHMA as open to leasing subject to no surface occupancy (NSO) (unless otherwise closed), controlled surface use (CSU), and Timing Limitations (TL). Refer to the following NSO exceptions. *(PHMA is subject to NSO; if NSO is excepted, waived, or modified, PHMA would also include Controlled Surface Use (CSU) for disturbance and density caps and Timing Limitations (TL) as described in MA-SSS-3 – see Appendix G, Stipulations Associated with Fluid Mineral Leasing.).*

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Unleased Federal Fluid Mineral Estate	***Unleased Federal Fluid Mineral Estate***	—	
MA-MR-3: Unleased Areas within PHMA PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations. In SFA, there will be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease NSO stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action: • Would not have direct, indirect, or cumulative effects on GRSG or its habitat; or, • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG. Exceptions based on conservation gain (ii) may only be considered in (a) PHMA of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal fluid mineral lease existing as of the date of this Approved RMPA. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other GRSG expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publically available at least quarterly. In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs). Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent GRSG use of PHMA).	**MA-MR-3:** Unleased Areas within PHMA PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations. Within PHMA, the Authorized Officer may grant an exception to a fluid mineral lease NSO stipulation where the proposed action: • Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document; or • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on the nearby parcel; this exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. The BLM Authorized Officer may grant a modification to a fluid mineral lease no surface occupancy stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the no surface occupancy stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, power lines). While the no surface occupancy stipulation could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3. The BLM Authorized Officer may grant a waiver to a fluid mineral lease no surface occupancy stipulation if, through the appropriate planning process (i.e., plan maintenance, amendment) the area is no longer within PHMA. Approved exceptions will be made publicly available at least quarterly. In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted. Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent GRSG use of PHMA).	Completely revised – revised by rangewide.	**Allocations for Unleased Areas within PHMA:** Open to leasing subject to no surface occupancy (NSO) (unless otherwise closed), controlled surface use (CSU), and Timing Limitations (TL). Refer to the following NSO exceptions. To approve waivers, exceptions or modifications based on any of the listed criteria, after coordination with the appropriate State agency, the Authorized Officer must document that the proposed action satisfies the listed criteria. If the State agency does not concur with granting the exception, the Authorized Officer must provide rationale for how the criteria are met considering the information the State provides. If the area associated with the proposed development seeking the exception or modification (e.g., well pad, compressor station) is in an area in which one of the adaptive management thresholds has been activated (refer to Adaptive Management Section), no exceptions or modification would be considered until the causal factor analysis is completed. If the causal factor analysis concludes fluid minerals is or could contribute to the threshold being activated or not recovering, no exception or modification would be granted. If the analysis is inconclusive on cause, exceptions or modifications could be considered. Waivers are excluded from this consideration. Prior to granting a waiver, exception, or modification to any GRSG NSO or Disturbance Cap fluid minerals stipulation, the Authorized Officer shall comply with regulatory public review requirements, if applicable (see 43 CFR 3101). **GRSG No Surface Occupancy Exceptions** a) **Exception I -** The Authorized Officer may consider and grant an exception to the NSO stipulation within 0.6 miles of active leks in PHMA if it is demonstrated that development and surface occupancy **has no direct impacts to or disruption of GRSG or its habitat** based on: I. The location of the proposed authorization is determined to be non-habitat (refer to **Appendix 6**, Glossary), does not provide important connectivity between habitat areas (as determined by a wildlife biologist and confirmed by the BLM using methods such as the HAF and coordinated with the appropriate state authority), and the project includes RDFs to prevent indirect disturbance to or disruption of adjacent seasonal habitats, regardless of distance from the active lek, that may impair their biological function; **OR** II. Topography/areas of non-habitat create an effective barrier to impacts (e.g., protected from visual and audible disturbances to GRSG and its habitat); **OR**

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(see above)	*(see above)*	*(see above)*	III. By co-locating the proposed authorization with existing disturbance, no additional impacts would be realized above those already associated with the existing similarly sized infrastructure, including indirect disturbance to or disruption of adjacent seasonal habitats that may impair their biological function. b) **Exception 2** - The Authorized Officer may consider and grant an exception to the NSO stipulation associated with the remainder of PHMA beyond 0.6 miles from active leks if **would not result in adverse effects to GRSG seasonal habitats** based on one of the following criteria: I. The criteria presented in Exception #1. **OR** II. The proposed project seeking the exception would not result in adverse effects to GRSG seasonal habitats based on site-specific information and application of the full range of mitigation tools (e.g., avoidance, minimization, voluntary compensation), as documented by a wildlife biologist and confirmed by the BLM. Proponents may demonstrate no adverse effects by mitigating residual impacts using voluntary compensatory mitigation. To grant this exception based on the use of voluntary compensatory mitigation, the compensation project must be completed and habitat functionality documented before the exception is granted. The compensation must also provide offsetting benefits to the population being impacted. c) **Exception 3** - An exception could be considered if the proposed location on public lands would be undertaken as an alternative to a similar action occurring on a nearby non-public lands parcel (e.g., due to ownership patterns), and development on the public parcel in question would eliminate impacts on more important and/or limited GRSG habitat (e.g., wet meadows, brood-rearing habitat) on the non-public nearby parcel; this exception must also include measures sufficient to allow the BLM to conclude in its documenting analysis that such benefits will endure for the duration of the proposed action's impacts on public lands (e.g., confirmation of an easement). **GRSG NSO Modifications** 1) The Authorized Officer may consider and grant a modification to the fluid mineral lease NSO stipulation, allowing for surface occupancy only where: an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station), **AND** **2)** the potential associated infrastructure related to the development is not individually precluded by other actions (e.g., roads, pipelines, power lines that could otherwise be considered through a ROW).

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(see above)	*(see above)*	*(see above)*	While the NSO stipulation could be modified for these additional developments, they must still comply with other GRSG management actions (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, RDFs) if an exception to the NSO is granted. **GRSG NSO Waiver** The Authorized Officer may consider and grant a waiver of the NSO stipulation on an existing lease after documenting, in coordination with the appropriate State agency, that the lease with the GRSG NSO stipulation is no longer in PHMA. This would only be applicable on leases that were issued when the parcel was in PHMA, then the PHMA boundaries were subsequently adjusted through the appropriate planning process. **GRSG Disturbance Cap Exceptions and Waivers** For fluid mineral (including geothermal) disturbance cap exceptions and waivers, follow the direction for Disturbance Cap exceptions and conditions section. **Disturbance Cap Modifications** None. **Disturbance Cap Waivers** The Authorized Officer may consider and grant a waiver of the stipulation on an existing lease if the area mapped as PHMA when the lease was issued is no longer mapped as such through the appropriate planning process. **GRSG Seasonal Constraints/Stipulations Exception** The Authorized Officer may consider and provide temporary relief from seasonal constraints (identified in the 2015 and 2019 Approved RMP Amendments, refer to **Appendix 2**) by granting an exception after documenting the review of available information, including best available science, associated with the site proposed for the exception. This direction applies in PHMA, GHMA, and all other state identified HMAs. While the BLM considers information from all sources, the state wildlife agency can provide information directly associated with GRSG use, including, if available, whether GRSG populations are not using the seasonal habitat during that year's seasonal life cycle. Based on this information and recommendation, and documented variability in seasonal conditions (e.g., early/late spring, long/heavy winter), use patterns, or other applicable information the Authorized Officer may consider a one-time exception if development associated with it will not have direct/indirect negative impacts on GRSG populations and/or their habitat.

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(see above)	*(see above)*	*(see above)*	**Seasonal Constraints/Stipulations Modifications** The BLM can grant modifications to seasonal restrictions if the BLM, in coordination with the state wildlife agency and other appropriate state authorities, on a case-by-case basis, determines that granting the modification would not adversely impact the population being protected. The Authorized Officer may grant a modification to the dates and areas associated with seasonal timing restrictions after documenting the review of available information associated with the site proposed for the modification based on one of the criteria described: 1) The geographic and temporal conditions demonstrate that any modification (shortening/extending seasonal timeframes) is justified on the basis that it serves to better protect or enhance GRSG and its habitat than if the strict application of seasonal timing restrictions are implemented. Under this scenario, modifications can occur if one or more of the following conditions can be documented: a. A proposed authorization is expected to have beneficial or neutral impacts on GRSG and its habitat. b. Topography or other factors eliminate direct and indirect impacts from visibility and audibility to GRSG and its habitat. c. There are documented local variations that indicate the seasonal life cycle periods are different than presented. 2) Modifications are needed to address an immediate public health and/or safety concern in a timely manner (e.g., maintaining a road impacted by flooding). **Seasonal Constraints/Stipulations Waiver** The Authorized Officer may consider and grant a waiver of the stipulation on an existing lease if the area that was mapped as a GRSG habitat management area (regardless of type) when the lease was issued is no longer mapped as such through the appropriate planning process. **Tracking Waivers, Exceptions, or Modifications** Refer to **Appendix 3**, Greater Sage-grouse Monitoring Framework, Measure 6 for tracking requirements. In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted. Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent GRSG use of PHMA).

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MA-MR-4: Unleased Areas within GHMA Manage fluid mineral leasing in GHMA as follows (Figure 2-4): • open to leasing, subject to standard stipulations: 238,700 acres • open to leasing, subject to CSU and/or TL stipulations: 294,200 acres • open to leasing, subject to NSO stipulations: 32,700 acres • closed to leasing: 28,400 acres • planning decision not mapped: 133,400 acres In GHMA, new development of fluid mineral leases could be considered if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5.	No similar action.	Completely revised – revised by rangewide.	**MA-MR-4:** Unleased Areas within GHMA Manage fluid mineral leasing in GHMA subject to existing planning decisions (pre-2015 management plans), which varies by office, including closed to fluid minerals leasing, NSO, controlled surface use (CSU), and timing limitation (TL) stipulations and open to leasing, subject to standard stipulations. *(In GHMA, new development of fluid mineral leases could be considered if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5 subject to WEM (see new Management Direction below).)*
N/A	***N/A***	New Management Direction	Exceptions, modifications, waivers for GRSG stipulations in RMPs that pre-date 2015 in GHMA are changed as follows: **NSO Exception** The Authorized Officer may grant an exception if an environmental record of review determines that the action, as proposed or conditioned, would not impair the function or utility of the site for the current or subsequent seasonal habitat, life-history, or behavioral needs of GRSG due to site-specific terrain and habitat features, such as topographic features that would reduce the habitat impacts by shielding nearby habitat from disruptive factors. An exception could also be granted if it can be demonstrated by a wildlife biologist and confirmed by the BLM, based on site-specific information (using state mitigation tools such as Habitat Equivalency Analysis or Habitat Quantification Tool, or other state mitigation programs), that the impacts anticipated by the proposed activity would be offset through compensatory mitigation developed in coordination with the appropriate State agency that meets principles of GRSG mitigation identified in the RMP. **NSO Modification** The Authorized Officer may grant a modification after a review of available information, and in coordination with the applicable state agency, documents that a portion of the NSO area is nonessential, or it is identified through scientific research or monitoring that the existing area is inadequate or overly protective for maintaining the function or utility of the site for the seasonal habitat, life-history, or behavioral needs of the GRSG, including (but not limited to) reproductive display, daytime loafing/staging activities, and nesting. Both direct and indirect impacts from a potential modification should be considered. **NSO Waiver** This stipulation may be waived for a specific lek if, in coordination with the appropriate state agency, it is determined that the GRSG lek that was active has been classified as inactive as determined by the WAFWA definitions and confirmed by the appropriate state agency. Prior to waiving the stipulations, surveys should confirm that the lek is inactive and not moved to another location in the vicinity. Any changes to this stipulation will be made in accordance

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(see above)	*(see above)*	*(see above)*	with the land use plan and/or the regulatory provisions for such changes. **Seasonal Constraints/Stipulations** **Season Constraints/Stipulations Exception** The Authorized Officer may consider and provide temporary relief from seasonal constraints by granting an exception after documenting the review of available information associated with the site proposed for the exception. This direction applies in PHMA, GHMA, and all other state identified HMAs. While the BLM considers information from all sources, the state wildlife agency can provide information directly associated with GRSG use, including whether GRSG populations are not using the seasonal habitat during that year's seasonal life cycle period. Based on this information and recommendation, and documented variability in seasonal conditions (e.g., early/late spring, long/heavy winter), use patterns, or other applicable information the Authorized Officer may consider a one-time exception if development associated with it will not affect GRSG habitat use. **Season Constraints/Stipulations Modifications** The BLM can grant modifications on a case-by-case basis to seasonal restrictions if the BLM, in coordination with the state wildlife agency and other appropriate state determines that granting the modification would not adversely impact the population being protected. The Authorized Officer may consider and grant a modification to the dates and areas associated with seasonal timing restrictions based on the criteria described below after documenting the review of available information associated with the site proposed for the modification, if the geographic and temporal conditions demonstrate that any seasonal modification is justified on the basis that it serves to better protect or enhance GRSG and its habitat than if the strict application of seasonal timing restrictions are implemented. Under this scenario modifications can occur if one or more of the following conditions can be documented: • A proposed authorization is expected to have beneficial or neutral impacts on GRSG and its habitat. • Topography or other factors eliminate direct and indirect visible and audible impacts to GRSG and its habitat. • There are documented local variations that indicate the seasonal life cycle periods are different than presented. • Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g., maintaining a road impacted by flooding). **Season Constraints/Stipulations Waiver** The Authorized Officer may consider and grant a waiver of the stipulation on an existing lease if the area that was mapped as a GRSG habitat management area, regardless of type, when the lease was issued is no longer mapped as such through the appropriate planning process.

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Leased Federal Fluid Mineral Estate	***Leased Federal Fluid Mineral Estate***	—	
MA-MR-5: Apply the following conservation measures through implementation decisions (e.g., approval of an application for permit to drill, geothermal drilling permit, Sundry Notice, Master Development Plans, etc.) and upon completion of the environmental record of review (43 CFR, Part 3162.5). In this process, evaluate whether the conservation measures are "reasonable" (43 CFR, Part 3101.1-2) with the valid existing rights.	No changes made.	Completely revised -revised by rangewide.	**Development in Areas Already Leased:** When considering exploration and development on areas leased for fluid mineral resources in PHMAs, application of measures to avoid, minimize, and/or mitigate potential impacts will be considered through completion of the requirements at 43 CFR Part 3162.5 (Environmental Review) and 36 CFR Part 228.108 (Surface Use Requirements). Such measures may include existing lease stipulations, project design, operator-committed measures, RMP required design features (RDFs), and local conditions of approval (COAs). The BLM will work with project proponents and the state wildlife agency to promote effective management and connectivity of seasonal habitats and PHMA to accomplish measurable GRSG conservation objectives. Surface use rights associated with existing leases will be recognized and respected. For proposed operations in PHMA, the Surface Use Plan of Operations (refer to 43CFR Part 3162.3-1(f)) shall address, at a minimum, the applicable RDFs in the RMP. RMP-defined project features reducing GRSG impacts not utilized in the Surface Use Plan of Operations based on site-specific or project-specific considerations shall be noted in the project file, along with a rationale for not including them. The BLM will evaluate whether each conservation measure is reasonable and consistent with surface use rights as part of the environmental review process (see 43 CFR Part 3101.12).
MA-MR-6: In PHMA, avoid, minimize, and compensate for impacts on GRSG and their habitat (e.g., habitat loss, fragmentation, indirect impacts, etc.) from new oil and gas development on existing leases. Where possible, place development outside of PHMA. If it is determined that this restriction renders the recovery of fluid minerals infeasible or uneconomic, considering the lease as a whole, or where development of existing leases requires that disturbance density exceeds 1 per 640, and/or 3 percent disturbance cap, apply other measures to site proposed lease activities to meet GRSG habitat objectives and require mitigation as described in Appendix F. If the lease is entirely within PHMA, if feasible, apply the lek buffers from MA-SSS-3H. If this is not technically feasible, locate infrastructure in areas that will minimize habitat loss. Require any development to be placed at the most distal part of the lease from the lek or in areas least harmful to GRSG populations and habitat (e.g., areas where local terrain features such as ridges and ravines may reduce habitat importance or shield nearby habitat from disruptive factors). For geophysical exploration activities, include seasonal TLs and RDFs as permit conditions of approval to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.	**MA-MR-6:** In PHMA, avoid, minimize, and compensate for impacts on GRSG and their habitat (e.g., habitat loss, fragmentation, indirect impacts, etc.) from new oil and gas development on existing leases (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA). Where possible, place development outside of PHMA. If it is determined that this restriction renders the recovery of fluid minerals infeasible or uneconomic, considering the lease as a whole, or where development of existing leases requires that disturbance density exceeds 1 per 640, and/or 3 percent disturbance cap, apply other measures to site proposed lease activities to meet GRSG habitat objectives and require mitigation as described in Appendix F. If the lease is entirely within PHMA, if technically feasible, apply the lek buffers from MA-SSS-3H. If this is not technically feasible, locate infrastructure in areas that will minimize habitat loss. Require any development to be placed at the most distal part of the lease from the lek or in areas least harmful to GRSG populations and habitat (e.g., areas where local terrain features such as ridges and ravines may reduce habitat importance or shield nearby habitat from disruptive factors). For geophysical exploration activities, include seasonal TLs and RDFs as permit conditions of approval to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.	Completely revised - revised by rangewide.	*(see above)*

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-MR-7: To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation, buffers, and RDFs).	**MA-MR-7:** To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	Completely revised -revised by rangewide.	*(see above)*
MA-MR-8: In PHMA, operators must submit a master development plan with site-specific plans of development for roads, wells, pipelines and other infrastructure prior to any development being authorized. The BLM will evaluate the plan through the NEPA process.	No changes made.	Completely revised -revised by rangewide.	*(see above)*
MA-MR-9: In PHMA, encourage unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on GRSG according to the Federal Lease Form, 3100-11, Sections 4 and 6.	No changes made.	Completely revised -revised by rangewide.	*(see above)*
MA-MR-10: In PHMA, identify areas where acquisitions (including federal mineral rights) or conservation easements, will benefit GRSG habitat.	No similar action.	Completely revised -revised by rangewide.	*(see above)*
MA-MR-11: In PHMA, require a full reclamation bond specific to the site in accordance with 43 CFR, Parts 3104.2, 3104.3, 3104.5, and 36 CFR, Part 228.109. Insure bonds are sufficient for costs relative to reclamation that will result in full restoration of the lands to the condition it was found prior to disturbance. Base the reclamation costs on the assumption that contractors will perform the work.	No changes made.	Completely revised -revised by rangewide.	*(see above)*
Locatable Minerals	***Locatable Minerals***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-12: SFA will be recommended for withdrawal from the Mining Law of 1872 (as amended), subject to valid existing rights (Figure 2-5, Locatable Minerals [Appendix A]). Other federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn will be available for locatable mineral entry. Areas that are recommended for withdrawal will continue to be managed as they are currently managed. In PHMA, to the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development and apply management to minimize and mitigate impacts. To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation and buffers). Regardless of whether agreements with the claimant incorporates the 3 percent disturbance cap (MA-SSS-3B), disturbance from locatable mineral development will be included as disturbance when calculating disturbance for other land uses.	**MA-MR-12:** Federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn will be available for locatable mineral entry. Areas that are recommended for withdrawal will continue to be managed as they are currently managed. In PHMA, to the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development and apply management to minimize and mitigate impacts. To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs). Regardless of whether agreements with the claimant incorporates the 3 percent disturbance cap (MA-SSS-3B), disturbance from locatable mineral development will be included as disturbance when calculating disturbance for other land uses.	Partially revised – (same as 2019 with addition of GHMA and SSS-5 see state specific).	**Allocation:** Open, unless currently withdrawn. **MA-MR-12:** Federal lands or non-federal lands with federal mineral interests within PHMA and GHMA that are not already withdrawn will be available for locatable mineral entry. Areas that are recommended for withdrawal will continue to be managed as they are currently managed. In PHMA, to the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development and apply management to minimize and mitigate impacts. To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation and buffers. Regardless of whether agreements with the claimant incorporates the 3 percent disturbance cap (MA-SSS-3B), disturbance from locatable mineral development will be included as disturbance when calculating disturbance for other land uses.

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Saleable Materials	***Saleable Materials***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-13: In PHMA, manage mineral materials as follows (Figure 2-6, Salable Minerals [Mineral Materials] [Appendix A]): • open to mineral materials development: 0 acres closed to mineral materials development: 2,587,100 acres	No changes made.	Completely revised – removed.	
MA-MR-14: Close PHMA to new mineral material sales. However, these areas remain "open" to free use permits and the expansion of existing active pits, only if the following criteria are met at all phases of the development (construction and long-term operation of facilities): • the activity is within the population area (BSU) and project area disturbance cap (MA-SSS-3B); • the activity is subject to the provisions set forth in the mitigation framework (MA-SSS-3A); • all applicable RDFs are applied (MA-SSS-3I); and • the activity applies the other pertinent management for discretionary activities in PHMA in MA-SSS-3. In GHMA, new mineral material developments can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	**MA-MR-14:** Close PHMA to new mineral material sales (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA). However, these areas remain "open" to free use permits and the expansion of existing active pits, only if the following criteria are met at all phases of the development (construction and long-term operation of facilities): • the activity is within the population area (BSU) and project area disturbance cap (MA-SSS-3B); • the activity is subject to the provisions set forth in the mitigation framework (MA-SSS-3A); • all applicable RDFs are applied (MA-SSS-3I); and the activity applies the other pertinent management for discretionary activities in PHMA in MA-SSS-3.	Partially revised – revised by state specific GHMA.	**MA-MR-14:** PHMA is closed, but open for new free use permits and open for the expansion of existing pits. (In PHMA, new development of could be considered if it applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3.) GHMA is open. Apply state-specific minimization measures identified in MA-SSS-5.
Non-Energy Leasable Minerals	***Non-Energy Leasable Minerals***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-15: In PHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (Figure 2-7, Non-Energy Leasable Minerals [Appendix A]): • Open to Leasing Consideration – 24,800 acres (National Forest System lands in Wyoming) • Closed to Leasing – 3,340,200 acres In PHMA, close federal lands and non-federal lands with federal mineral interests to nonenergy leasable mineral leasing. However, expansion of existing operations could be considered if the new lease is contiguous with an existing operation and the new lease (construction, operation, or maintenance) applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	**MA-MR-15:** In PHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (Figure 2-7, Non-Energy Leasable Minerals [Appendix A]) (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA): • Open to Leasing Consideration – 24,800 acres (National Forest System lands in Wyoming) • Closed to Leasing – 3,340,200 acres In PHMA, close federal lands and non-federal lands with federal mineral interests to nonenergy leasable mineral leasing. However, expansion of existing operations could be considered if the new lease is contiguous with an existing operation and the new lease (construction, operation, or maintenance) applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	Partially revised – revised by editorial updates to acres.	**MA-MR-15:** In PHMA, manage nonenergy leasable minerals as closed to new leases but allow expansion of existing operations. **Management Direction:** Apply required design features, best management practices, and minimization measures identified in the existing GRSG amendments (refer to **Appendix 2**)
MA-MR-16: In GHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (Figure 2-7): • Open to Leasing Consideration – 699,300 acres • Closed to Leasing – 28,200 acres New leasing and development in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	Completely revised – revised by state specific.	**MA-MR-16:** In GHMA, manage nonenergy leasable minerals as Open. **Management Direction:** Apply State-specific minimization measures identified in MA-SSS-5 as amended.

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MA-MR-17: In PHMA, exploration and prospecting activities associated with nonenergy leasable minerals will be required to comply with the same stipulations identified for leasing and development, above. In addition: • The exploration/prospecting activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) (MA-SSS-3G). • Facilities associated with exploration/prospecting activities will be removed before the next breeding season. Disturbances will be restored.	No changes made.	No change (same as 2015).	Same as 2015
Coal	***Coal***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-18: <u>Leases Associated with Surface Mining</u> At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR, Part 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1).	**MA-MR-18:** <u>Leases Associated with Surface Mining</u> At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR, Part 3461.5. Coordination with the appropriate State of Utah agency and the determination of essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1) will consider site-specific information associated with potential lease nomination areas as part of the unsuitability process identified above.	Completely revised -revised by rangewide.	**Management Direction:** Unless a suitability process has already been conducted that considered GRSG HMAs, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR Part 3461.5. Coordination with the appropriate state agency and the determination of essential habitat for maintaining GRSG as per the suitability criteria at 43 CFR Part 3461.5(o)(1) will consider site-specific information associated with lease nomination areas as part of the unsuitability process.
MA-MR-19: <u>Leases Associated with Underground Mining</u> Consider leasing PHMA for coal that will be extracted through underground mining. Require the following stipulations as part of any new lease or lease modification: • In PHMA, appurtenant facilities will not be placed in GRSG habitat, where technically feasible. • In PHMA, if placement of facilities outside of GRSG habitat is not technically feasible, disturbances associated with the lease (construction, operation, or maintenance) can be allowed if they are consistent with the pertinent management for discretionary activities identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, noise restrictions, seasonal restrictions, etc.). If the above criteria cannot be met, do not grant new leases or modifications.	No changes made.	No change (same as 2015).	Same as 2015
MA-MR-20: New leasing for underground mining of coal in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	Completely revised -revised by statewide.	Same as 2015 with amended MA-SSS-5
MA-MR-21: In PHMA, exploration activities needed to meet data adequacy standards associated with potential coal leasing will be required to comply with the pertinent management for discretionary activities identified in MA-SSS-3 (e.g., mitigation, disturbance cap, buffers, noise restrictions, seasonal restrictions, etc.).	No similar action.	No change (same as 2019).	Same as 2019

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MA-MR-22: For underground coal mining operations on existing leases: In PHMA, unless required for technical or safety reasons, do not authorize new appurtenant surface facilities for existing underground mining. If new appurtenant surface facilities associated the existing mine leases cannot be located outside of PHMA, collocate them with any existing disturbed areas, if possible. If collocation is not possible, then construct new facilities to minimize disturbed areas while meeting mine safety standards/requirements, as identified by Mine Safety and Health Administration mine-plan approval process, and locate the facilities in an area least harmful to GRSG habitat based on vegetation, topography, or other habitat features.	No changes made.	No change (same as 2015).	Same as 2015
MA-MR-23: For coal mining operations on existing leases: In GHMA, new disturbances could be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No changes made.	Completed revised – revised by state specific.	Same as 2015 with amended MA-SSS-5
Mineral Split-Estate	***Mineral Split-Estate***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-MR-24: Where the federal government manages the mineral estate in PHMA and GHMA, and the surface is in non-federal ownership, apply the same stipulations, conditions of approval, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner. Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use conditions of approval, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	**MA-MR-24:** Where the federal government manages the mineral estate in PHMA, and the surface is in non-federal ownership, apply the same stipulations, conditions of approval, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner. Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA, apply appropriate surface use conditions of approval, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Partially revised – revised by state specific.	Same as 2015

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RENEWABLE ENERGY (WIND AND SOLAR) (RE)	***RENEWABLE ENERGY (WIND AND SOLAR) (RE)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
Wind Energy Development **MA-RE-1:** PHMA will be designated as exclusion areas for wind energy development (2,026,400 acres) (Figure 2-8, Wind [Appendix A]). Do not site wind energy development in opportunity areas within 5 miles from occupied GRSG leks that are in PHMA. Manage wind energy development in GHMA as follows: • Open – 484,900 acres • Avoided – 0 acres • Excluded – 17,600 acres New wind ROW authorizations can be allowed in GHMA if they apply the pertinent management for discretionary activities identified in MA-SSS-5. *Solar Energy Development* The BLM's Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States (October 2012) excluded all GRSG occupied habitat to new utility-scale solar development. Because the existing land use plans already exclude solar development in GRSG habitat; this plan amendment process does not need to make additional decisions related to solar development (Figure 2-9, Solar [Appendix A]).	*Wind Energy Development* **MA-RE-1:** PHMA will be designated as exclusion areas for wind energy development (2,026,400 acres) (Figure 2-8, Wind [Appendix A]). Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B from occupied GRSG leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunities areas will impact lek persistence within PHMA. *Solar Energy Development* The BLM's Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States (October 2012) excluded all GRSG occupied habitat to new utility-scale solar development. Because the existing land use plans already exclude solar development in GRSG habitat; this plan amendment process does not need to make additional decisions related to solar development (Figure 2-9, Solar [Appendix A]).	Completely revised – revised by rangewide.	See revisions below.
UTILITY SCALE SOLAR			
			Utility scale solar projects are projects with nameplate capacity (theoretical output registered with authorities) of 5 megawatt (MW) or higher that deliver electricity to the electricity transmission grid (refer to **Appendix 6**, Glossary). **PHMA** **Objective:** N/A **Allocation:** Utility scale solar testing and development is excluded from all PHMA; development as ancillary support for other approved uses (e.g., mineral developments, data centers) could occur if one of the exceptions can be met. **Management Direction:** **Exception Criteria** Apply Exception Criteria as defined in the Fluid Mineral Lease Exceptions.

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			GHMA **Objective:** N/A **Allocation:** Open with GHMA minimization measures described in MA-SSS-5 (as amended below), to maintain habitat supporting GRSG populations consistent and concurrent with state agency habitat designations (e.g., restoration, connectivity, seasonal, or other), and to preclude negative impacts to any adjacent PHMA habitats. Portions of GHMA between PHMA in Hamlin Valley, Bald Hills/Panguitch, Emma Park Porphyry Bench, and Uinta Mountains (Browns Park/Diamond Mountain): Avoidance. Development could be authorized if the Authorized Officer can document that there would be no negative impacts to any PHMA habitats or important seasonal habitats in connectivity areas. New ROWs in the remainder of GHMA could be considered if pertinent management for discretionary activities in GHMA identified in MA-SSS-5 as amended are applied. **Management Direction:** N/A
UTILITY SCALE WIND			
			Utility scale wind projects are projects larger than 1 megawatt (MW) (refer to **Appendix 6**, Glossary). **PHMA** **Objective:** N/A **Allocation:** Exclusion for utility scale wind testing and development (including met towers). **Management Direction: None** **Exception Criteria: None**
			Objective: N/A **Allocation:** Open with GHMA minimization measures described in MA-SSS-5 as amended, to maintain habitat supporting GRSG populations consistent and concurrent with state agency habitat designations (e.g., restoration, connectivity, seasonal, or other), and to preclude negative impacts to any PHMA habitats. Portions of GHMA between PHMA in Hamlin Valley, Bald Hills/Panguitch, Emma Park Porphyry Bench, and Uinta Mountains (Browns Park/Diamond Mountain): Avoidance. Development could be authorized if the Authorized Officer can document that there would be no negative impacts to any PHMA habitats or important seasonal habitats in connectivity areas. New ROWs in the remainder of GHMA could be considered if pertinent management for discretionary activities in GHMA identified in MA-SSS-5 as amended are applied. **Management Direction:** N/A
LANDS AND REALTY (LR)	***LANDS AND REALTY (LR)***	—	
Objectives:	**Objectives:**	—	
Objective LR-1: Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.	No changes made.	No change (same as 2015).	Same as 2015

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Management Actions (MA):	**Management Actions (MA):**	—	
MA-LR-1: In PHMA, manage lands ROWs, permits, and leases as follows (Figure 2-11, Rights-of-Way [Appendix A]): • Open: 18,900 acres (associated with designated above-ground ROW corridors) • Avoided: 1,997,000 acres Excluded: 10,500 acres	No changes made.	Completely revised – removed.	
MA-LR-2: <u>Linear and Site-Type ROWs, Permits, and Leases (excluding wind and solar)</u> PHMA will be avoidance areas for new linear and site type ROWs, permits, and leases except for within ROW corridors designated for aboveground use. Placement of new ROWs, permits, and leases in PHMA shall be avoided if at all possible. Where avoidance is not possible in PHMA, placement of a new ROW/permit/lease can be allowed if it applies the management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, buffers, tall structure restrictions, seasonal restrictions, and applicable RDFs). In PHMA, lands ROWs, permits and leases that cannot be avoided shall be located in areas that minimize the effect on the GRSG population (e.g., non-habitat areas, least suitable habitat, collocated with existing disturbances). In PHMA, new proposals for power lines, access roads, pump storage, and other hydroelectric facilities licensed by Federal Energy Regulatory Commission will be subject to all GRSG ROW avoidance allocations and pertinent management for discretionary activities in MA-SSS-3. Outside PHMA, portions of opportunity areas within 4-miles of a lek that is located in PHMA will be avoidance areas for new ROWs, permits and leases, applying stipulations for noise and tall structures. In addition to the above requirements, the subsequent conditions will apply to specific types of ROW authorizations: <u>Transmission Lines</u> PHMA are designated as avoidance areas for high voltage transmission line ROWs, except for the transmission projects specifically identified below. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this plan, including the RDFs and avoidance criteria presented in MA-SSS-03. The BLM is currently processing an application for TransWest Express (including those portions of Energy Gateway South that are collocated) and the NEPA review for this project is well underway. Conservation measures for GRSG are being analyzed through the project's NEPA review process, which should achieve a net conservation benefit for the GRSG. In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different	**MA-LR-2:** <u>Linear and Site-Type ROWs, Permits, and Leases (excluding wind and solar)</u> PHMA will be avoidance areas for new linear and site type ROWs, permits, and leases except for within ROW corridors designated for aboveground use. Placement of new ROWs, permits, and leases in PHMA shall be avoided if at all possible. Where avoidance is not possible in PHMA, placement of a new ROW/permit/lease can be allowed if it applies the management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, buffers, tall structure restrictions, seasonal restrictions, and applicable RDFs). In PHMA, lands ROWs, permits and leases that cannot be avoided shall be located in areas that minimize the effect on the GRSG population (e.g., non-habitat areas, least suitable habitat, collocated with existing disturbances). In PHMA, new proposals for power lines, access roads, pump storage, and other hydroelectric facilities licensed by Federal Energy Regulatory Commission will be subject to all GRSG ROW avoidance allocations and pertinent management for discretionary activities in MA-SSS-3. Outside PHMA, portions of opportunity areas within 4-miles of a lek that is located in PHMA will be avoidance areas for new ROWs, permits and leases, applying stipulations for noise and tall structures. In addition to the above requirements, the subsequent conditions will apply to specific types of ROW authorizations: <u>Transmission Lines</u> PHMA are designated as avoidance areas for high voltage transmission line ROWs, except for the transmission projects specifically identified below. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this plan, including the RDFs and avoidance criteria presented in MA-SSS-03. The BLM is currently processing an application for TransWest Express (including those portions of Energy Gateway South that are collocated) and the NEPA review for this project is well underway. Conservation measures for GRSG are being analyzed through the project's NEPA review process, which should achieve a net conservation benefit for the GRSG. In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment or construction method (e.g., burial) better minimizes impacts on GRSG. New ROWs constructed adjacent to existing infrastructure will be constructed as	Partially revised- retain general language from 2019; but replace with specific language related to major transmission and pipelines to rangewide.	<u>Linear and Site-Type ROWs, Permits, and Leases (excluding wind and solar)</u> **<u>PHMA:</u>** **Allocation:** Avoidance for new major Rights-of-Way (ROWs: linear features such as overhead transmission lines, distribution pipelines, and large non-linear surface disturbing projects. Refer to **Appendix 6**, Glossary). **Management Direction**: If during consideration of a proposed project-level authorization for a ROW action, the determination of whether it is a major or minor ROW is questioned, with supporting rationale, the Authorized Officer, in consultation with the BLM State Office lead(s), will make the final determination. Authorizations may be granted if one of the criteria below and the additional conditions are met. **Major Rights-of-Way Avoidance Criteria:** 1) RMP designated corridors within PHMA are open to considerations of a new major ROW in the category of ROW for which the corridor was designated if the proposed authorization within the existing ROW corridor results in impacts similar to those already described in the environmental analysis to establish the corridor, including indirect disturbance to or disruption of adjacent seasonal habitats; **OR**, 2) The ROW can be routed through, or located within, non-habitat. Non-habitat will be determined by a wildlife biologist and confirmed by the BLM using criteria such as the HAF and coordinated with state wildlife agencies and other appropriate state authority. ROWs shall minimize disruption of connectivity between habitat areas and should be designed to prevent indirect disturbance to or disruption of adjacent seasonal habitats (as disclosed in the environmental analysis); a. Applicants must clearly demonstrate to the Authorized Officer, in consultation with the BLM State Office lead(s) that no viable alternatives exist for placement of facilities outside the avoidance area prior to analyzing placement within an avoidance area. b. ROWs may be placed in PHMA if doing so reduces the risk of wildfire, decreases risk to human health and safety, or meets national security needs. The ROW must be the minimum necessary to achieve the ROW's purpose and would not otherwise be viable in an area that is "open" to ROW; **OR**

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alignment better minimizes impacts on GRSG. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint. In PHMA outside of designated corridors, new transmission lines must be buried where technically feasible. Where burying transmission lines is not technically feasible: • new transmission lines must be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG; and • they will be subject to GRSG ROW avoidance criteria described above. In PHMA, if an existing transmission line is being upgraded to a higher voltage transmission line outside an existing corridor: • the existing transmission line must be removed within a reasonable amount of time after the new line is installed and energized; and • the new line must be constructed in the same alignment as the existing line unless an alternate route will benefit GRSG or GRSG habitat. In PHMA, where existing guy wires are determined to have a negative impact on GRSG or its habitat, they shall be removed or appropriately marked with bird flight diverters to make them more visible to GRSG in flight. <u>Pipelines</u> In PHMA, major pipelines (greater than 24 inches) that cannot avoid PHMA will be placed in designated corridors where technically feasible. Where not technically feasible, pipelines shall be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG. <u>Communication Sites</u> In PHMA, new communication towers that cannot avoid PHMA must be located, where technically feasible, within an existing communication site. New sites will be considered where necessary for public safety.	close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint. In PHMA, if an existing transmission line is being upgraded to a higher voltage transmission line outside an existing corridor: • the existing transmission line must be removed within a reasonable amount of time after the new line is installed and energized; and • the new line must be constructed in the same alignment as the existing line unless an alternate route will benefit GRSG or GRSG habitat. In PHMA, where existing guy wires are determined to have a negative impact on GRSG or its habitat, they shall be removed or appropriately marked with bird flight diverters to make them more visible to GRSG in flight. <u>Pipelines</u> In PHMA, major pipelines (greater than 24 inches) that cannot avoid PHMA will be placed in designated corridors where technically feasible. Where not technically feasible, pipelines shall be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG. <u>Communication Sites</u> In PHMA, new communication towers that cannot avoid PHMA must be located, where technically feasible, within an existing communication site. New sites will be considered where necessary for public safety.	*(see above)*	3) The proposed location on federal lands would be undertaken as an alternative to a similar action occurring on a nearby non-federal lands parcel, and development on the public parcel in question would eliminate impacts on more important and/or limited GRSG habitat (e.g., wet meadows, brood-rearing habitat) on the non-federal nearby parcel. The ROW must be the minimum necessary to achieve the ROW's purpose and would not otherwise be viable in an area that is "open" to ROWs. *If one or multiple of the avoidance criteria can be met, the ROW must also meet the following conditions in order to be permitted in PHMA:* a) Micro-siting while developing the major ROW is required to limit impacts and maintain connectivity corridors between seasonal habitats. This includes using topography and non-habitat as effective barriers to adverse impacts and co-location with existing, similarly sized, infrastructure; **AND**, . b) Where the development of the major ROW is outside a designated corridor, apply minimization measures (e.g., disturbance cap, seasonal constraints, tall structure limitations, RDFs, nest and perch deterrents). c) Residual direct and indirect impacts would be mitigated consistent with state mitigation policies or requirements as applicable. If requiring mitigation both inside and outside of RMP-designated corridors disincentivizes location in the designated corridor or another route that has lesser impacts to GRSG, the Authorized Officer may consider adjusting the mitigation requirement if doing so reduces impacts to GRSG compared to an alignment that otherwise requires mitigation (e.g., development in an RMP-designated corridor that has existing transmission lines already present). The Authorized Officer shall coordinate with the applicable state agencies to ensure compliance with compensatory mitigation to the extent required by state policies or regulations. <u>Communication Sites</u> In PHMA, new communication towers that cannot avoid PHMA must be located, where technically feasible, within an existing communication site. New sites will be considered where necessary for public safety. <u>Outside PHMA</u> Outside PHMA, portions of opportunity areas within 4-miles of a lek that is located in PHMA will be avoidance areas for new ROWs, permits and leases, applying stipulations for noise and tall structures.

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-LR-3: <u>Road ROWs</u> In PHMA, new road ROWs will be authorized when necessary for public safety, administrative access, or subject to valid existing rights. If the new ROW is necessary for public safety, administrative access, or subject to valid existing rights and creates new surface disturbance, then avoid, minimize, and compensate for the impacts. In PHMA, limit route construction to realignments of existing ROWs if the realignment maintains or enhances GRSG habitat, eliminates the need to authorize a new ROW to construct a new road, or is necessary for public safety or public need. In PHMA, subject to valid existing rights, new road ROWs/easements will be authorized only when necessary for public safety or administrative access or, if it creates no new or de minimis new surface disturbance. In PHMA, collocate new ROWs as close as technically possible to existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary. In PHMA, existing Federal Highway Act Appropriation ROWs will be managed as valid existing rights, and new Federal Highway Act ROWs will continue to be considered and subject to all GRSG ROW plan restrictions.	No changes made.	No change (same as 2015).	Same as 2015
MA-LR-4: In PHMA, designate ROW corridors as identified on Figure 2-10, Designated Utility Corridors [Appendix A]: • Retain 17,600 acres of existing designated ROW corridor • Retain 44,300 acres of existing designated ROW corridor, but stipulate new developments be limited to underground use only • Undesignate 18,200 acres of existing designated ROW corridor In PHMA, placement of new ROWs in corridors should be avoided if at all possible. Where avoidance is not possible: • Allow new linear ROWs in designated corridors. • New ROWs constructed in designated corridors will be constructed as close as technically feasible to existing linear ROW infrastructure to limit disturbance to the smallest footprint, unless using a different alignment better minimizes impacts on GRSG. Apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3.	No changes made.	Partially revised – revised to update acres and align conditions with rangewide.	**MA-LR-4:** In PHMA, designate ROW corridors as identified on Figure 2-10, Designated Utility Corridors [Appendix A]) Utah 2015 Approved RMP Amendment): RMP designated corridors within PHMA are open to consideration of a new major ROW in the category of ROW for which the corridor was designated if the proposed authorization within the existing ROW corridor results in impacts similar to those already described in the environmental analysis to establish the corridor, including indirect disturbance to or disruption of adjacent seasonal habitats. *(In PHMA, new development could be considered if it applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3.)*

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-LR-5: In PHMA, when a ROW grant expires, is relinquished, or terminated, required rehabilitation as a term and condition of the FLPMA ROW grant, in compliance with 43 CFR, Part 2805.12(i). • the lease holder will be required to restore the site by removing overhead lines and other infrastructure, and; • eliminate existing raven nesting opportunities created by anthropogenic development on public lands (e.g., remove power line and communication facilities no longer in service). In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure. Where technically feasible, require ROW holders to bury or relocate existing power lines to minimize long-term impacts on GRSG habitat. Where the potential long-term impacts of relocating or burying the line will be greater than the existing impacts, do not pursue the mitigation. If relocation or burying is not feasible or will result in severe short-term or greater long-term impacts on GRSG habitat, incorporate additional terms and conditions in the ROW authorization for protection of GRSG habitat. Work with ROW holders to retrofit existing towers with perch deterrents or other anti-perching devices, where appropriate, to limit GRSG predation.	**MA-LR-5:** In PHMA, when a ROW grant expires, is relinquished, or terminated, required rehabilitation as a term and condition of the FLPMA ROW grant, in compliance with 43 CFR, Part 2805.12(i). • the lease holder will be required to restore the site by removing overhead lines and other infrastructure, and; • eliminate existing raven nesting opportunities created by anthropogenic development on public lands (e.g., remove power line and communication facilities no longer in service). In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure on GRSG (e.g., predator deterrents, maintenance schedules, relocation, burial, etc.). Where the potential long-term impacts of mitigation will be greater than the existing impacts, do not pursue the mitigation. If relocation or burying is not feasible or will result in severe short-term or greater long-term impacts on GRSG habitat, incorporate additional terms and conditions in the ROW authorization for protection of GRSG habitat. Work with ROW holders to retrofit existing towers with perch deterrents or other anti-perching devices, where appropriate, to limit GRSG predation.	No change (same as 2019).	Same as 2019
MA-LR-6: In PHMA, where existing leases or ROWs have had some level of development (road, fence, well, etc.) and are no longer in use, remove the features and restore the habitat.	No changes made.	No change (same as 2015).	Same as 2015
MA-LR-7: In GHMA, manage ROWs, permits, and leases as follows (Figure 2-11): • Open: 484,900 acres • Avoided: 0 acres • Excluded: 17,600 acres • New ROWs (including permits and leases) authorizations will be allowed if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5.	No similar action.	Completely revised – revised by state specific.	**<u>Major Rights of Way</u>** **Allocation:** Open with applicable state minimization measures from MA-SSS-5 (as amended below), to maintain habitat supporting GRSG populations consistent with state agency habitat designations (e.g., restoration, connectivity, seasonal, or other), and to preclude negative impacts to PHMA habitats. Portions of GHMA between PHMA in Hamlin Valley, Bald Hills/Panguitch, Emma Park Porphyry Bench, and Uinta Mountains (Browns Park/Diamond Mountain): Avoidance. Development could be authorized if the Authorized Officer can document that there would be no negative impacts to any PHMA habitats or important seasonal habitats in GHMA connectivity areas. New ROWs in the remainder of GHMA (non-connectivity) could be considered if pertinent management for discretionary activities in GHMA identified in MA-SSS-5 as amended are applied. **Management Direction:** N/A **<u>Minor Rights of Way</u>** **Allocation:** Open with applicable state mitigation requirements from MA-SSS-5 (as amended below). **Management Direction:** N/A
MA-LR-8: In GHMA, retain 74,700 acres of designated ROW corridors as identified on Figure 2-10.	No similar action.	Partially revised – revised by sate specific.	**MA-LR-8:** In GHMA, retain designated ROW corridors as identified on Figure 2-10 (Utah 2015 Approved RMP Amendment).

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
Land Tenure	***Land Tenure***	—	
MA-LR-9: Lands classified as PHMA and GHMA for GRSG will be retained in federal management (Figure 2-12, Land Tenure [Appendix A]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide a net conservation gain to the GRSG or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on conservation of the GRSG.	**MA-LR-9:** Lands classified as PHMA for GRSG will be retained in federal management (Figure 2-12, Land Tenure [Appendix A]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will improve the condition of GRSG habitat or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will not compromise the persistence of GRSG populations within a PHMA.	No change (same as 2019).	Same as 2019
MA-LR-10: In PHMA, where suitable conservation actions cannot be achieved, seek to acquire state and private lands with intact federal mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore GRSG habitat.	No changes made.	No change (same as 2015).	Same as 2015
• Recommended Withdrawals	***Recommended Withdrawals***	—	
MA-LR-11: SFA will be recommended for withdrawal from the Mining Law of 1872 (as amended), subject to valid existing rights. Other federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry (Figure 2-5).	**MA-LR-11:** Federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry (Figure 2-5).	Partially revised (same as 2019 with addition of GHMA and refer to state specific).	**MA-LR-11:** Federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry (Figure 2-5) (Utah 2015 Approved RMP Amendment).
RECREATION (REC)	***RECREATION (REC)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-REC-1: In PHMA, only allow BLM SRPs that have neutral or beneficial effect on GRSG and their habitat. Evaluate existing SRPs for adverse effect on GRSG and their habitat. Modify or cancel the permit, as appropriate and where possible to avoid or mitigate effects of habitat alterations or other physical disturbances to GRSG (e.g., breeding, brood-rearing, migration patterns, or winter survival). Identify permit stipulations that require the permittee to implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with GRSG habitat objectives.	No changes made.	No change (same as 2015).	Same as 2015
MA-REC-2: In PHMA, do not construct new recreation facilities (e.g., campgrounds, trailheads, staging areas) unless the development will have a net conservation gain to GRSG habitat (such as concentrating recreation, diverting use away from critical areas, etc.), or unless the development is required for visitor health and safety or resource protection.	No changes made.	No change (same as 2015).	Same as 2015
TRAVEL AND TRANSPORTATION MANAGEMENT (TTM)	***TRAVEL AND TRANSPORTATION MANAGEMENT (TTM)***	—	
Management Actions (MA):	**Management Actions (MA):**	—	
MA-TTM-1: Manage off-highway vehicle (OHV) use in GRSG habitat as follows (Figure 2-13, Trails and Travel Management [Appendix A]): • Open to cross-country use: 525 acres (one area each in Parker Mountain and Uintah Population Areas) • Limited to existing routes: 1,274,700 acres • Limited to designated routes: 1,220,500 acres • Closed: 33,200 acres	**MA-TTM-1:** Manage off-highway vehicle (OHV) use in GRSG habitat as follows (Figure 2-13, Trails and Travel Management [Appendix A]): • Open to cross-country use: 525 acres (one area each in Parker Mountain and Uintah Population Areas); two areas outside of PHMA in the Sheeprocks Population Area, associated with 5-Mile Pass (6,320 acres) and Little Sahara Sand Dunes (7,900 acres) • Limited to existing routes: 1,260,500 acres • Limited to designated routes: 1,220,500 acres • Closed: 33,200 acres	No change (same as 2019).	Same as 2019

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-TTM-2: PHMA and GHMA that do not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). OHV Areas designated as "closed" will be managed as areas closed to motorized vehicles. OHV Areas designated as "limited existing" within PHMA will be managed as "limited to existing roads, primitive roads, and trails" until the completion of an implementation level travel plan. Individual route designations will occur during subsequent implementation level travel management planning efforts. Upon the completion of implementation level travel management plans OHV areas designated as "Limited" will automatically transition to "limited to designated roads, primitive roads and trails."	**MA-TTM-2:** PHMA that does not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). Two areas that were GHMA previously will remain limited to existing routes, though they would no longer be GHMA: 7,400 acres in the Bald Hills area and 13,500 acres in the Fillmore Field Office portions of Sheeprocks area, east of Highway 6. The other two areas of former GHMA (6,320 acres in the 5-Mile Pass area and 7,900 acres in the Little Sahara Recreation Area) will also remain limited until the BLM completes the Section 106 OHV area designation process found in the *Programmatic Agreement among the Advisory Council on Historic Preservation, The Bureau of Land Management – Utah and the Utah State Historic Preservation Office regarding National Historic Preservation Act Responsibilities for Travel and Transportation Management Undertakings*. Under the Programmatic Agreement the BLM will identify an Area of Potential Effect, conduct an identification process, make a finding of effect, and if necessary, develop a historic properties treatment plan. Once these procedures are completed, the applicable portions of these areas will revert to being open to cross-country use, consistent with prior RMP OHV allocations. OHV Areas designated as "closed" will be managed as areas closed to motorized vehicles. OHV Areas designated as "limited existing" within PHMA will be managed as "limited to existing roads, primitive roads, and trails" until the completion of an implementation level travel plan. Individual route designations will occur during subsequent implementation level travel management planning efforts. Upon the completion of implementation level travel management plans OHV areas designated as "Limited" will automatically transition to "limited to designated roads, primitive roads and trails."	No change (same as 2019).	Same as 2019

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-TTM-3: Implementation level travel planning efforts will be guided by the goals, objectives and guidelines outlined in the GRSG section, relevant national and Utah specific guidance as well as the following: • A timeline to complete travel planning efforts will be identified, prioritized and updated annually in all relevant planning areas to accelerate the accomplishment of: data collection, route evaluation and selection, and on the ground implementation efforts including signing, monitoring and rehabilitation. • During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, a public outreach plan to fully engage all interested stakeholders will be incorporated into future travel management plans. • Among other designation criteria from 43 CFR, Part 8342.1(b), "areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats." • During subsequent travel management planning, all routes will undergo a route evaluation to determine its purpose and need and the potential resource and/or user conflicts from motorized travel. Where resource and/or user conflicts outweigh the purpose and need for the route, the route will be considered for closure or considered for relocation outside of sensitive GRSG habitat. • During subsequent travel planning, threats to GRSG and their habitat will be considered when evaluating route designations and/or closures. • During subsequent travel management planning, routes that do not have a purpose or need will be considered for closure. • During subsequent travel management, planning, routes that are duplicative, parallel, or redundant will be considered for closure. • During subsequent travel management planning, seasonal restrictions on OHV use will be considered in important seasonal habitats where OHV use is a threat. During subsequent travel management planning, consider limiting over snow vehicles designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow to designated routes or consider seasonal closures in GRSG wintering areas from November 1 through March 31.	**MA-TTM-3:** Implementation level travel planning efforts will be guided by the goals, objectives and guidelines outlined in the GRSG section, relevant national and Utah specific guidance as well as the following: • A timeline to complete travel planning efforts will be identified, prioritized and updated annually in all relevant planning areas to accelerate the accomplishment of: data collection, route evaluation and selection, and on the ground implementation efforts including signing, monitoring and rehabilitation. • During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, an outreach plan to fully engage all interested stakeholders, including state, local, and tribal governments, will be incorporated into future travel management plans. • Among other designation criteria from 43 CFR, Part 8342.1(b), "areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats."	No change (same as 2019).	Same as 2019

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
• During subsequent travel management planning, routes not required for public access or recreation with a current administrative/agency purpose or need will be evaluated for administrative access only. • During subsequent travel management planning, consider prioritizing restoration of routes not designated in a Travel Management Plan. • During subsequent travel management plan implementation, consider using seed mixes or transplant techniques that will maintain or enhance GRSG habitat when rehabilitating linear disturbances. During subsequent travel management plan implementation, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Consider using time of day limits (e.g., no use between 6:00 pm and 9:00 am) to reduce impacts on GRSG during breeding periods.	*(see above)*	*(see above)*	*(see above)*
MA-TTM-4: In PHMA, complete transportation plans in accordance with National BLM Travel Management guidance, requiring the BLM to maintain a current action plan and planning schedule to most effectively target available resources. The following GRSG population areas are Utah's top priority areas to designate comprehensive travel plans: • Sheeprocks • Box Elder • Ibapah • Bald Hills • Rich • Hamlin Valley	No changes made.	No change (same as 2015).	Same as 2015
MA-TTM-5: In PHMA, travel systems will be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on GRSG, maintain motorist safety, and prevent unauthorized cross country travel while meeting access needs. To do so, it may be necessary to improve portions of existing routes, close existing routes or create new routes that meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning will be placed on having a neutral or positive effect on GRSG habitat.	No changes made.	No change (same as 2015).	Same as 2015
MA-TTM-6: In PHMA, when considering upgrade of existing routes that will change route category (BLM route categories: road, primitive road, or trail) or capacity, consider the larger transportation network while providing for protection of GRSG habitat.	No similar action.	No change (same as 2019).	Same as 2019

2015 BLM GRSG Approved RMP Amendment	Changes between 2015 and 2019 GRSG Management	2025 BLM GRSG Approved RMP Amendment (Summary)	2025 BLM GRSG Approved RMP Amendment (Full Text)
MA-TTM-7: In PHMA, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance. Apply additional effective mitigation necessary to offset the resulting loss of GRSG habitat. Plan for new routes in consideration of the larger transportation network objectives and needs while providing for protection of GRSG habitat.	No changes made.	No change (same as 2015).	Same as 2015
MA-TTM-8: In PHMA, when reseeding roads, primitive roads and trails, use appropriate seed mixes and consider the use of transplanted sagebrush.	No similar action.	No change (same as 2019).	Same as 2019
MA-TTM-9: Develop an educational process to advise OHV users of the potential for conflict with GRSG.	No changes made.	No change (same as 2015).	Same as 2015
MA-TTM-10: In PHMA and GHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR, subpart 8351 (Designated National Area); 43 CFR, subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR, subpart 8341 (Conditions of Use) and any applicable policies. • Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that OHVs are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR, Part 8341.2) A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.	**MA-TTM-10:** In PHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR, subpart 8351 (Designated National Area); 43 CFR, subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR, subpart 8341 (Conditions of Use) and any applicable policies. • Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that OHVs are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR, Part 8341.2) A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.	Partially revised – revised to state specific.	**MA-TTM-10:** In PHMA and GHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR, subpart 8351 (Designated National Area); 43 CFR, subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR, subpart 8341 (Conditions of Use) and any applicable policies. • Temporary closure or restriction orders under these authorities are enacted at the discretion of the Authorized Officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an Authorized Officer determines that OHVs are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR, Part 8341.2) A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.

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Appendix 3

Greater Sage-grouse Monitoring Framework

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Appendix 3. Greater Sage-grouse Monitoring Framework

3.1 FORWARD

The revised Bureau of Land Management (BLM) Greater Sage-Grouse (GRSG) Monitoring Framework was developed after five years of implementing the 2015 BLM and United States Forest Service (USFS) GRSG Monitoring Framework which culminated in the 2020 Greater Sage-Grouse Five-year Monitoring Report. Since implementing the monitoring efforts described in the original Monitoring Framework, new data has become available and new approaches to analyzing these data have been developed. This update maintains the existing measures included in the original document and expands upon them to include this new science. Measures for monitoring are identified at two scales: the rangewide scale and land use plan (LUP) scale. The former will provide insight into habitat conditions and BLM management actions across jurisdictional boundaries which will, in turn, provide context to the smaller scale LUP monitoring described herein. For each scale of monitoring a suite of 6 measures are identified and a methodology which the BLM will utilize to collect information informing each measure is described. Importantly, specific datasets and analysis approaches may be modified through the implementation of this monitoring framework so that BLM can adapt to new information as it becomes available. The data collected and analyzed for each of the measures described at both scales will vary in spatial extent. For example, measures leveraging remotely sensed data can and will be examined across all habitat management areas (HMAs) within the planning area as well as the BLM managed subset of these habitats. Other measures will apply specifically to BLM managed habitats or subsets thereof (i.e. disturbance and density caps). Further, LUP decisions may identify specific spatial extents at which some measures are analyzed and tracked, such as to inform adaptive management threshold status. As such, during the implementation of this monitoring framework, the spatial extent of all monitoring and analyses addressing the identified measures will be documented and communicated during effectiveness evaluation efforts.

This Monitoring Framework is related to several other pieces of larger LUPs and associated management direction they provide. The GRSG Monitoring Framework leverages data, information, and assessments to monitor LUP implementation. Appendix 4 of this LUP establishes GRSG habitat objectives, indicators, and benchmarks. These indicators and benchmarks are utilized in the Habitat Assessment Framework (HAF). The results of these habitat assessments inform the wildlife and/or sensitive species component of the Land Health Standards (LHS) evaluation process (43 CFR 4180.2). The GRSG Monitoring Framework provides a consistent format for reporting if the LUP objectives are being met or making progress to being met, based on the results of these assessment and planning tools.

Table 3-1. Relationships of LUPs, HAF, LHS, and Monitoring Framework

LUP	GRSG HAF	LHS Evaluation	GRSG Monitoring Framework
Sets GRSG habitat objective(s) and identifies the GRSG habitat indicators and benchmarks from best available science for evaluating progress toward meeting the objective.	Provides methods to assess GRSG habitats at multiple scales, using the indicators and benchmarks from the applicable LUP Habitat Indicators appendix.	Evaluates if the sage-grouse portion of the Special Status Species/Wildlife Habitat (SSS/WL) LHS is achieved or significant progress towards achievement is made. These evaluations utilize HAF results along with other data.	Provides framework for reporting progress toward achieving the objective(s) of the LUP, including habitat suitability.

3.2 SECTION I: RANGEWIDE MONITORING

3.2.1 Introduction

This rangewide monitoring section of the BLM Revised GRSG Monitoring Framework is an update from the original BLM and USFS GRSG Monitoring Framework (2015) expands and clarifies the BLM's GRSG rangewide habitat condition monitoring and reporting. Described here are the six measures (**Table 3-2**), and associated updated methodologies, incorporating the original monitoring measures from 2015 (habitat condition and habitat degradation) with additional measures (land cover, habitat indicators, habitat suitability and population trend) that guide the BLM's GRSG monitoring and reporting.

The information gathered from monitoring and reporting on the six rangewide measures (**Table 3-2**) is intended to inform an evaluation of BLM's effectiveness (Section III of this BLM Revised GRSG Monitoring Framework) toward meeting the BLM's overarching goal for GRSG: *to conserve and manage GRSG habitats to support persistent, healthy populations, consistent with BLM's sensitive species policy and in cooperation with other conservation partners. Conservation and management should maintain existing connectivity between GRSG populations.*

Table 3-2. The Six Rangewide Monitoring Measures, Associated Sub-Measures, Monitoring Questions and Data Sources for BLM Monitoring of GRSG Habitat Conditions and Population Trends

Measures	Monitoring Questions	Data
Measure 1: Vegetation Availability and Condition		
Measure 1a: Vegetation Condition and trend	What is the status and trend of the habitat indicators describing habitat characteristics important to GRSG as well as ecological threats to GRSG (e.g., annual invasive grasses, bare ground) on BLM lands?	BLM Assessment, Inventory, and Monitoring (AIM)
Measure 1b: Current and Historical Amounts of Sagebrush	What is the current versus historical extent of sagebrush within GRSG habitat? How have recent disturbances (fires and treatments) affected the extent of sagebrush?	LANDFIRE
Measure 1c: Percent Sagebrush Cover and Trend	What is the percent cover of sagebrush and trend in sagebrush percent cover?	Rangeland Condition Monitoring Assessment and Projection (RCMAP)
Measure 1d: Percent Annual Herbaceous Cover and Trend	What is the percent cover and trend of annual herbaceous cover?	RCMAP

Measures	Monitoring Questions	Data
Measure 1e: Percent Tree Cover within Sagebrush	What is the percent cover and trend of tree cover in sagebrush communities?	RCMAP
Measure 2: Habitat Degradation and Development Intensity in GRSG Habitat		
Measure 2a: Habitat degradation	What is the estimated amount of habitat degradation rangewide and the estimated change in the amount?	Geospatial analysis using datasets representing anthropogenic development
Measure 2b: Intensity of degradation	What is the estimated density of energy development activities and the change in the estimated density?	Geospatial analysis using datasets representing anthropogenic development
Measure 2c: Degradation cap compliance	Were any disturbance or density caps above project scale exceeded?	Geospatial analysis using datasets representing anthropogenic development
Measure 2d: Reclamation	What is the amount of reclaimed energy-related degradation on BLM lands and the change in the amount?	Geospatial analysis using datasets representing reclamation on BLM-managed lands
Measure 3: GRSG Habitat Suitability		
Measure 3a: Habitat assessment status	What is the status of GRSG habitat assessments at the mid- and fine-scales across the range?	BLM's HAF tracking system
Measure 3b: Habitat suitability at mid and fine scales	What is the suitability of GRSG habitats at mid and fine spatial scales across the range?	BLM's HAF tracking system
Measure 4: Achievement of LHS in GRSG Habitat		
Measure 4a: Status of land health evaluations	How many acres were evaluated for achievement of the SSS/WL LHS in GRSG habitat across the range?	BLM's LHS Database
Measure 4b: Status of LHS	For areas that have been evaluated in GRSG habitat, what is the status of land health and what are the causes of non-achievement (as applicable)?	BLM's LHS Database
Measure 5: BLM On-The-Ground Conservation and Restoration Efforts for GRSG		
Measure 5a: Summary of conservation efforts	How many acres/miles were conserved or restored by treatment or action type in GRSG habitat across the range?	National Fire Plan Operations and Reporting System/Vegetation Management Action Portal, Other BLM Project Tracking
Measure 6: GRSG Population Trend Rangewide		
Measure 6a: Annual Range-wide Trend	What is the rangewide average annual population trend?	United States Geological Survey (USGS) Rangewide Population Trend Analysis for GRSG
Measure 6b: Cumulative Range-wide Trend	What is the rangewide cumulative population trend?	USGS Rangewide Population Trend Analysis for GRSG

3.2.2 Methods

The datasets used, and the land ownerships included in the data, vary by monitoring type. For example, the monitoring of habitat indicators uses on-the-ground data and information from BLM lands only. Conversely, the rangewide monitoring of landcover, sagebrush availability and disturbance use geospatial data covering all land ownerships. The population trend monitoring uses state wildlife agencies' data that also covers all land ownership in GRSG habitat. Best available datasets outlined here will be used to analyze the monitoring measures and for reporting on GRSG habitat however BLM reserves the right to change data and analysis methods as it deems appropriate.

Measure 1. Vegetation Availability and Condition

Sagebrush availability and vegetation condition analyses are analyzed rangewide for GRSG, excluding the Bi-State Distinct Population Segment and the Columbia Basin population. Analyses differ in the timeframe and type of data used (remotely sensed products versus collected on the ground), the lands to which the analyses apply (all lands versus BLM-managed lands), and in GRSG habitat.

Datasets selected for monitoring must meet key criteria to ensure consistent and accurate monitoring:

- The dataset must be consistent rangewide
- There must be a known accuracy level or level of confidence for the dataset
- The dataset must be based in peer-reviewed science
- The dataset must be maintained and have a known update plan
- The dataset must be readily available
- Consistent methodology must have been used to derive datasets that are compared; different datasets may be used to calculate different measures.

The following datasets, which meet the key criteria, should be analyzed for Measure 1; however, additional data and analyses may also be considered, if justified and documented:

1. BLM AIM for 1a,
2. LANDFIRE (Picotte et al. 2016) for 1b and
3. RCMAP (Rigge et al. 2022) for 1c, 1d, and 1e.

We considered three types of fractional datasets for calculating Measures 1c, 1d, and 1e. Fractional datasets contain pixels or cells that represent areas on the ground which may each contain vegetation cover types such as sagebrush, trees, or herbaceous. A fractional dataset represents the percentage of one vegetation cover type that is present in each pixel (e.g., 50 percent sagebrush, 25 percent trees, or 25 percent herbaceous). The three datasets considered, that are new since the 2015 BLM/USFS GRSG Monitoring Framework, are:

- Landscape Cover Analysis and Reporting Tools (LandCART; Zhou et al. 2020),
- Rangeland Analysis Program (RAP; Allred et al. 2021), and
- RCMAP.

Accuracies and applicability for the three types of datasets are similar but mixed. BLM Tech Note 456, which compares these datasets, recommends that users consider their individual data needs and uses when selecting from them (Savage et al. 2022). **Table 3-3** summarizes some characteristics of the datasets specifically considered for this BLM Revised GRSG Monitoring Framework and, although not comprehensive, reflects the intent to use RCMAP. RAP does not have a sagebrush dataset and it is currently difficult to obtain rangewide data from LandCART but improvements are in progress. Importantly, BLM partners with USGS to fund RCMAP, ensuring the reliability of readily available data, regular updates and maintenance, and data suited for use in this BLM Revised GRSG Monitoring Framework. See **Appendix B, Table B2** for the RCMAP Accuracy Assessment. We recommend using only one data type (for 1c, 1d, & 1e) such that data can be overlaid or compared without concern for different methods that created the data. If additional fractional datasets become available and fit the key criteria above, they may be considered for use in calculating the Measures 1c, 1d, and 1e.

Table 3-3. Dataset Characteristics For Measure 1c, 1d, And 1e

Dataset Characteristics	LandCART	RAP	RCMAP
Annual herbaceous	Y	Y	Y
Sagebrush	Y	N	Y
Tree cover	Y	Y	Y
Rangewide extent	Difficult	Y	Y
Trend	Y	User calculates	Y

Measure 1a: What is the status and trend of the habitat indicators and threats to GRSG (e.g., non-native invasive grasses, bare ground) on BLM lands?

The vegetation condition monitoring is based on estimates for 6 GRSG habitat indicators (e.g., sagebrush cover) and estimates of 7 threat indicators (e.g., invasive species) (Herrick et al. 2017). These estimates will be based on field data collected through the BLM's national monitoring efforts on BLM-managed rangeland ecosystems. These data are part of the AIM program including the National AIM Survey (also known as the Landscape Monitoring Framework, Yu Li et al. 2020 and generally described in Karl et al. 2016). The AIM estimates provide consistent and standardized data about vegetation conditions broadly across the range.

The 6 GRSG habitat indicators are:

1. Percent cover of sagebrush
2. Mean sagebrush species height
3. Proportion of sagebrush that is spreading shaped
4. Percent cover of perennial grasses and perennial forbs
5. Mean herbaceous plant species height
6. Percent of lands where native plants make up 95 percent or more of vegetation cover

The 7 threat indicators are:

1. Proportion of sagebrush that is columnar shaped
2. Percent cover of bare ground
3. Proportion of nonnative invasive species present
4. Proportion where greater than or equal to 5 percent of foliar cover is comprised of nonnative invasive species

5. Proportion of vegetation composed of annual grasses
6. Proportion of vegetation composed of nonnative invasive plant species
7. Percent of lands with greater than 3 percent cover of pinion – juniper.

The vegetation condition summary is reported for BLM-managed GRSG habitats. Also of importance is that the data is collected in areas that retain rangeland vegetation and exclude areas physically converted to agriculture or disturbance from development.

The estimates combine indicator data from all sampling locations collected within a given year. An analysis for trend will be performed for each of these indicators. Analysis details will be included in monitoring reports.

Measure 1b: What is the current versus historical extent of sagebrush within the range of GRSG? How have recent disturbances affected the extent of sagebrush?

Measure 1b estimates both historic and current extent of sagebrush. The datasets to calculate these metrics are the most recent LANDFIRE Biophysical Setting (BpS), Existing Vegetation Type (EVT), Existing Vegetation Cover (EVC), and Existing Vegetation Height (EVH). EVT will be adjusted for recent fires and BpS will be adjusted for sagebrush areas in EVT (see below for details). LANDFIRE data meets the key criteria defined above and has ample thematic resolution with several different sagebrush vegetation classes. For the 2015 Monitoring Framework, vegetation classes from LANDFIRE EVT and BpS were selected to use in the sagebrush and sagebrush potential or historic layers by identifying the classes that include sagebrush species and that could provide suitable seasonal habitat for GRSG (See **Appendix A, Table A1**). In these classes, sagebrush may not be the dominant species, but it is an attempt to include the maximum likely geographic extent and some of the uncertainty on the ground captured by products derived from remotely sensed data (see **Appendix B, Table B1** for Agreement Assessment details). The sagebrush layer used for reporting will be created using these selected classes from EVT. The following two metrics will be reported for each year:

1) 1.b.1. The amount of sagebrush in GRSG habitat compared with the amount of sagebrush that GRSG habitat could historically support without disturbance, that is, the existing sagebrush versus the potential sagebrush. The measure will be calculated as [the existing area of sagebrush] divided by [the potential area of sagebrush expected pre-Euro American settlement]. The data will be summarized including a histogram, mean and standard deviation, and median and quartiles for GRSG habitat.
2) 1.b.2. Recent vegetation treatments (National Fire Plan Operations and Reporting System and Vegetation Management Action Portal data) are integrated into some LANDFIRE data causing changes in EVH and EVC datasets but these changes are not reflected in EVT for now, although this may change (personal communication Daryn Dockter, Brian Tolk, May 2023). BLM will use EVH and EVC with EVT to determine how recent treatments affect the extent of sagebrush using the guidelines:
    a. If EVT = sagebrush but EVH or EVC = 0 for shrubs, then disturbance has likely removed the sagebrush. These pixels will be removed from the EVT dataset annually.
    b. If EVT = sagebrush and EVH = grass less than 1.0 meter, past disturbance has likely removed the sagebrush and grass or forbs are growing. These pixels will be removed from the EVT dataset annually.
    c. If EVT = sagebrush and EVH = shrub 1 to 3 meters then there is likely sagebrush here. These pixels will be retained in the EVT dataset annually.

d. These changes will be summarized across GRSG habitat.

LANDFIRE EVT includes fires burned up to the end of the previous fiscal year so updates will be needed for more recent fires and can be made using NIFC WFIGS *yyyy*, Interagency Fire Perimeters to Date (where *yyyy* is the current year). LANDFIRE processes postfire change detection using satellite imagery and Monitoring Trends in Burn Severity program. See below for LANDFIRE data accuracy and update details.

In EVT there are small areas that show sagebrush and sagebrush associated classes which are not matched in the BpS dataset. Based on the assumption that sagebrush is unlikely to expand in the short term, we assume that BpS is in error and these classes in BpS need to be adjusted to the classes shown in EVT. This adjustment supports the simple division of existing by potential sagebrush that is described above.

Because of concerns over the thematic accuracy of individual classes mapped by LANDFIRE, all ecological systems listed in **Appendix A, Table A1** will be aggregated into three groups that represent sagebrush, sagebrush associated, and other vegetation types. With all ecological systems aggregated, the combined accuracy, measured as an agreement assessment, of the sagebrush base layer (EVT) will be much greater than if all categories were treated separately (LANDFIRE 2016 Remap EVT Agreement Assessment). We used the Southwest (Arizona, California, Nevada, Utah, west Colorado, and west New Mexico) and Northwest GeoAreas (Idaho, Montana, Oregon, Washington, and Wyoming) to estimate sagebrush assessment agreements where sagebrush, sagebrush associated, and other field data are assigned autokeys and these are compared to LANDFIRE EVT (**Appendix B, Table B1**). The Southwest GeoArea agreement assessments were 55 percent for sagebrush, and 50 percent for sagebrush associated. The Northwest GeoArea agreement assessments were 69 percent for sagebrush and 57 percent for sagebrush associated.

LANDFIRE maintains a substantial disturbance spatial database using agency and other data; refinements to the process were made in 2020 with plans to update annually. LANDFIRE also uses National Landcover Database (NLCD) roads and urban classes, the Monitoring Trends in Burn Severity program, Burned Area Reflectance Classification data, and Rapid Assessment of Vegetation Condition after Wildfire data to apply changes to the database on a yearly basis. LANDFIRE uses a change algorithm to account for fires and models postfire vegetation recovery. While LANDFIRE intends to update annually, refinements may still be made to the EVT data for more recent changes due to wildfire (see above) and anthropogenic disturbances such as agriculture and urban, using the processes and datasets recommended below.

LANDFIRE uses the NLCD (Fry et al. 2011) to make urban adjustments including imperviousness dataset; high, medium, and low development; roads; open space; and broad vegetation types. NLCD is prioritized over other datasets if there is a discrepancy in land cover. NLCD impervious data has a roads description including primary, secondary, and tertiary; two track roads are not included. NLCD obtains building footprints from Microsoft data and USGS processing. NLCD data are generated on a 5-year cycle and are specifically designed to support monitoring efforts but the lag in NLCD may limit LANDFIRE data. To determine agricultural areas and types, LANDFIRE uses the annually updated National Agricultural Statistics Service Cropland Data Layer. The LANDFIRE disturbance processing will also pick up agricultural expansion and treatments when they are reported.

Measure 1c: What is the percent cover of sagebrush and trend in sagebrush percent cover?
Sagebrush fractional cover data will be used to estimate the current proportion of sagebrush in GRSG habitat. The most recent RCMAP fractional sagebrush cover will be used to calculate this measure (Rigge et al. 2022).

For each year of monitoring, the statistical distribution of percent sagebrush cover will be calculated and reported including a histogram, mean and standard deviation, and median and quartiles at spatial scales relevant to BLM LUP decisions and management, for example, HAF fine-scale extents. If updated literature suggests levels of percent sagebrush cover that are more appropriate to GRSG, these thresholds will be applied in addition to the standards described above. For example, if less than the literature-specified threshold of sagebrush is determined to be unsuitable for GRSG across GRSG habitat, an assessment of the area of and distribution that is above and below this cover threshold will be conducted.

Shi et al. (2022) modeled time-series trends in RCMAP continuous vegetation using two methods: 1) linear regression and 2) breaks and stable states modeling. We recommend using the linear trends results because, while accuracy was similar between the two modeling versions, linear trend results are more easily interpreted (Shi et al. 2022). For each pixel in the linear trends data, the slope represents the average percent cover change and the p-value is the confidence in the change value for each year. Within GRSG habitat, the trend of sagebrush cover will be monitored using the time-series linear trends data from RCMAP for all years of data to calculate the summary statistics as described above.

Measure 1d: What is the percent cover and trend of annual herbaceous cover?

The most recent RCMAP Annual Herbaceous fractional data will be used to estimate the current area, distribution, and proportion of annual forbs and grasses in GRSG habitat. In the Western US, the RCMAP annual herbaceous dataset primarily represents annual invasive species such as Cheatgrass, Medusahead, Red Brome, and annual mustards (Multi-Resolution Land Characteristics Consortium RCMAP website, https://www.mrlc.gov/data/rcmap-annual-herbaceous-cover-1, accessed March 2023). At higher elevations and in California, the annual herbaceous cover dataset may also represent native annual herbaceous vegetation types (Multi-Resolution Land Characteristics Consortium RCMAP website, https://www.mrlc.gov/data/rcmap-annual-herbaceous-cover-1, accessed March 2023).

For each year of monitoring, the statistical distribution of percent annual herbaceous cover will be calculated including a histogram, the mean and standard deviation, and median and quartiles at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents. If updated literature suggests levels of percent annual herbaceous cover that are more appropriate to GRSG, apply these thresholds in addition to the standards described above. For example, if less than the literature-specified threshold of annual herbaceous cover is determined to be unsuitable for GRSG across GRSG habitat, assessments of and distribution of annual herbaceous cover that is above and below this cover threshold will be conducted.

The trend of annual herbaceous cover will be reported for all years of data using the annual time-series linear trends data from RCMAP to calculate the summary statistics described above. The trend of annual herbaceous cover will be compared to the trend in sagebrush cover in GRSG habitat.

Measure 1e: What is the percent cover and trend of tree cover in sagebrush communities?

Over the past several decades, many studies have found that GRSG avoid habitat near conifers (Nisbet et al. 1983, Doherty et al. 2010; Fedy et al. 2014; Doherty et al. 2016; Westover et al. 2016; Baxter et al. 2017; Picardi et al. 2020; Roth et al. 2022), survival tends to increase when GRSG inhabit areas further away from conifers (Brussee et al. 2022), and populations have increased when conifers are removed (Olsen et al. 2021).

For the purposes of the Monitoring Framework, an upper limit threshold is needed to determine the percent of conifer cover within a certain distance of sagebrush that still provides suitable habitat for GRSG (see **Appendix C, Table C1** for summaries). Peer-reviewed findings are summarized in the following bullets:

- **0 percent** In Nevada, GRSG preferred areas with no conifer cover for lekking (Nisbet et al. 1983) and for brood rearing to areas with 1 to 10 percent conifer cover (Brussee et al. 2022).
- **2 percent** In California, GRSG preferred less than 2 percent conifer cover year-round (Coates et al. 2017). In Nevada and Utah, GRSG preferred areas with less than 2 percent conifer cover for breeding and summer season (Beers et al. 2022).
- **3 percent** In Oregon and Utah, less than 3 percent conifer was found to be more suitable for GRSG lekking and nesting within 800 meters and 1000 meters (Cook et al. 2017), within 560 meters for lekking (Doherty et al. 2021), and within 800 meters for nesting (Severson et al. 2017).
- **4 percent** In Oregon, Nevada, and Utah, areas with less than 4 percent conifer cover were found to be more suitable for nesting (Sandford et al. 2017; Severson et al. 2017) or found to be more suitable year-round within 400 meters and 800 meters and while there was sagebrush contiguity (Beers et al. 2022). Areas with greater than 4 percent conifer cover had no active leks (Baruch-Mordo et al. 2013) or were found to be less suitable for lekking (Cook et al. 2017).

We examined other work that obtained values outside of this range and determined that they were not useful for our purposes. In California, large-scale evidence suggested that GRSG avoided areas with greater than 5 percent conifer cover for brood rearing; however, 5 percent was set as a value instead of being determined by the data, and subsequent modeling was inconclusive (Casazza et al. 2011). In Nevada and Utah, Beers et al. (2022) found that during winter, GRSG selected areas with less than 11 percent conifer cover, but year-round 4 percent was a more appropriate threshold. In Nevada, GRSG avoided areas with greater than 30 percent conifer cover and selected areas with 10 to 30 percent cover within 1000 meters; the authors speculated that these unusually high conifer cover values may have been in areas where heterogenous shrub communities thrived and, in the absence of predators, attracted GRSG (Gibson et al. 2015).

The range of 0 to 4 percent of tree canopy cover has been shown to have the lowest impacts on GRSG year-round in several states (**Appendix C, Table C1**). Within GRSG habitat the extent and summary statistics (histogram, mean and standard deviation, and median and quartiles) of tree cover that is within 1000m of sagebrush and 1) less than 4 percent and 2) greater than 4 percent will be calculated.

Within GRSG habitat, the trend of tree cover that is greater than 4 percent and is within 1000 meters of sagebrush will be calculated and reported for all years of data using the annual time-series linear trends data from RCMAP to calculate the summary statistics described above. The trend of tree cover will be compared to the trend in sagebrush cover in GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents.

Measure 2. Habitat Degradation and Development Intensity in GRSG Habitat

Rangewide disturbance estimates

The measure of habitat degradation will be calculated by combining estimated footprints of, or the counts of, threats identified in **Table 3-4** within GRSG habitat. Footprints are estimated to be the direct area of influence of "active" energy and infrastructure and, in combination with feature counts, will be used as a surrogate for human activity. Data sources for each threat are found in **Table 3-4**, Geospatial Data Sources for Habitat Degradation and Intensity Calculations (Measure 2) in GRSG Habitat Excluding the Bi-State

Distinct Population Segment and the Columbia Basin Population. Specific assumptions (inclusion criteria for data, width/area assumptions for point and line features, etc.) and methodologies are described below. All datasets will be updated annually to monitor changes through time and to inform adaptive management.

Table 3-4. Geospatial Data Sources for Habitat Degradation and Intensity Calculations (Measure 2) in GRSG Habitat Excluding the Bi-State Distinct Population Segment and the Columbia Basin Population

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil and gas)	Wells	Information Handling Services (IHS); BLM Automated Fluid Minerals Support System (AFMSS)	5.0 acres (2.0 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	5.0 acres (2.0 hectares)	BLM WO-300
Energy (coal)	Mines	BLM; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/ Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	3.0 acres (1.2 hectares)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3 acres (3.0 hectares)/mega watt	National Renewable Energy Laboratory
Energy (geothermal)	Wells	IHS	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7 feet (12.4 meters)	USGS
	Major Roads	Esri StreetMap Premium	84.0 feet (25.6 meters)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2 feet (73.2 meters)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8 feet (9.4 meters)	USGS
Infrastructure (power lines)	1 to 199 kilovolt (kV) Lines	Platts (transmission lines)	100 feet (30.5 meters)	BLM WO-300
	200 to 399 kV Lines	Platts (transmission lines)	150 feet (45.7 meters)	BLM WO-300
	400 to 699kV Lines	Platts (transmission lines)	200 feet (61.0 meters)	BLM WO-300

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
	700+ kV Lines	Platts (transmission lines)	250 feet (76.2 meters)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5 acres (1.0 hectares)	BLM WO-300
Infrastructure (other vertical structures)	Tall Structures	Federal Avian Administration	2.5 acres (1.0 hectares)	Knick et al. 2011

Rangewide Habitat Degradation Datasets and Assumptions

Energy (Oil and Gas Wells and Development Facilities)

This dataset will compile information from three oil and gas databases: the proprietary IHS database, the BLM Automated Fluid Minerals Support System (AFMSS) database, and the proprietary Platts (a McGraw-Hill Financial Company) GIS (hereafter, Platts) database of power plants.

Point data from wells active within the last 10 years from IHS and producing wells from AFMSS will be considered as a 5-acre (2.0-hectare) direct area of influence centered on the well point, as recommended by the BLM WO-300 (Minerals and Realty Management). Plugged and abandoned wells will be separated from the active oil and gas well dataset but retained for analysis inclusion if the date of well abandonment was before the first day of the reporting year (i.e., for the 2015 reporting year, a well must have been plugged and abandoned by December 31, 2014 to be removed).

Platts oil and gas power plants data (subset to operational power plants) will also be included as a 5-acre (2.0-hectare) direct area of influence.

Wells marked as plugged and abandoned within the last 10-years will also be segregated from the "active" and "active within the last 10 years" well data described above. These data attempt to quantify energy-related degradation that may have been reclaimed, but not necessarily fully restored to sage-grouse habitat. Direct area of influence will be considered 3 acres (1.2 hectares) (J. Perry, personal communication, February 12, 2014).

Energy (Coal Mines)

Currently, there is no comprehensive dataset available that identifies the footprint of active coal mining across all jurisdictions. Therefore, point and polygon datasets will be used each year to identify coal mining locations. Data sources will be identified and evaluated annually and will include at a minimum: BLM coal lease polygons, United States (U.S.) Energy Information Administration mine occurrence points, U.S. Office of Surface Mining Reclamation and Enforcement coal mining permit polygons (as available), and USGS Mineral Resources Data System mine occurrence points. These data will inform where active coal mining may be occurring.

Coal power plant data from Platts power plants database (subset to operational power plants) will be included. Aerial imagery will then be used to digitize manually the active coal mining and coal power plants surface disturbance in or near these known occurrence areas. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to digitize (generally at 1:10,000 and below) active coal mine and power plant direct area of influence. Coal mine location data source and imagery date will be documented for each digitized coal polygon at the time of creation. Subsurface facility locations (polygon or point location as available) will also be collected if available, included in density

calculations, and added to the active surface activity layer as appropriate (if an actual direct area of influence can be located).

Energy (Wind Energy Facilities)

This dataset will be a subset of the Federal Aviation Administration (FAA) Digital Obstacles point file. Points where attribution indicates the feature is a windmill will be included. The direct area of influence of these point features will be a circular totaling 3 acres (1.2 hectares) centered on each tower point. See the BLM's "Wind Energy Development Programmatic Environmental Impact Statement" (BLM 2005). Additionally, the Platts power plants database will be used for transformer stations associated with wind energy sites (subset to operational power plants), also with the same 3-acre (1.2-hectare) direct area of influence.

Energy (Solar Energy Facilities)

This dataset will include solar plants as compiled with the Platts power plants database (subset to operational power plants). This database includes an attribute that indicates the operational capacity of each solar power plant. Total capacity at the power plant was based on ratings of the in-service unit(s), in megawatts. Direct area of influence polygons will be centered over each point feature representing 7.3 acres (3.0 hectares) per megawatt of the stated operational capacity, per the report of the National Renewable Energy Laboratory, "Land-Use Requirements for Solar Power Plants in the United States" (Ong et al. 2013).

Energy (Geothermal Energy Facilities)

This dataset will include geothermal wells in existence or under construction as compiled with the IHS wells database and power plants as compiled with the Platts database (subset to operational power plants). Direct area of influence of these point features will be measured by converting to a polygon dataset of 3 acres (1.2 hectares) centered on each well or power plant point.

Mining (Active Developments; Locatable, Leasable, Saleable)

This data theme is notably lacking in a comprehensive source spanning the range of GRSG. Currently, there are no known complete databases available for leasable or saleable mining sites beyond coal mines. Aerial imagery will be used to manually digitize large active mining surface disturbance in or near known occurrence areas originally informed by the proprietary InfoMine database. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to digitize (generally at 1:10,000 and below) active mine direct area of influence. Mine location data source and imagery date will be documented for each digitized polygon at the time of creation. Other data sources will be evaluated and used as they are identified or as they become available. Point data may be converted to polygons to represent direct area of influence unless actual surface disturbance is available.

Infrastructure (Roads)

This dataset will be compiled from the proprietary Esri StreetMap Premium for ArcGIS. Dataset features that will be used are: Interstate Highways, Major Roads, and Surface Streets to capture paved and "crowned and ditched" roads. The surface street data have been demonstrated to include some "two-track" and 4-wheel-drive routes. The direct area of influence for roads will be represented by 240.2 feet, 84.0 feet, and 40.7 feet (73.2 meters, 25.6 meters, and 12.4 meters) total widths centered on the line feature for Interstate Highways, Major Roads, and Surface Streets, respectively (Knick et al. 2011).

Infrastructure (Railroads)

This dataset will be a compilation from the Federal Railroad Administration Rail Lines of the USA dataset. Non-abandoned rail lines will be used; abandoned rail lines will not be used. The direct are of influence for

railroads will be represented by a 30.8-foot (9.4-meter) total width (Knick et al. 2011) centered on the non-abandoned railroad line feature.

Infrastructure (Power Lines)

This line dataset will be derived from the proprietary Platts transmission lines database. Linear features in the dataset attributed as "buried" will be removed from the disturbance calculation. Only "In Service" lines will be used; "Proposed" lines will not be used. Direct area of influence will be determined by the kV designation: 1 to 199 kV (100 feet/30.5 meters), 200 to 399 kV (150 feet/45.7 meters), 400 to 699 kV (200 feet/61.0 meters), and 700+ kV (250 feet/76.2 meters) based on average right-of-way and structure widths, according to BLM WO-300 (Minerals and Realty Management).

Infrastructure (Communication Towers)

This point dataset will be compiled from the Federal Communications Commission communication towers point file; all duplicate points within the dataset will be removed. Points will be converted to a polygon dataset by using a direct area of influence of 2.5 acres (1.0 hectares) centered on each communication tower point (Knick et al. 2011).

Infrastructure (Other Vertical Structures)

This point dataset will be compiled from the FAA's Digital Obstacles point file. This dataset generally captures all tall structures over 200 meters, with additional structures below this threshold captured in areas surrounding airports which could pose an aviation risk. For additional information please visit the FAA DOF FAQs site. Points where attribution indicates the feature is a windmill will be removed. Duplicate points from the Federal Communications Commission communication towers point file will be removed. The remaining features will be converted to a polygon dataset using a direct area of influence of 2.5 acres (1.0 hectares) centered on each vertical structure point (Knick et al. 2011).

Other Developed Rights-Of-Way

Currently, no additional data sources for other developed rights-of-way have been identified. Roads, power lines, railroads, pipelines, and other known linear features are represented in the categories described above. If additional features representing human activities are identified representing developed rights-of ways outside of the themes described above, they will be added to the degradation analyses using similar assumptions to those used with the threats described above.

Disturbance Inventories

The BLM has partnered with the USGS and, over the past several years, has begun inventorying existing disturbances via "heads-up" digitization using aerial imagery within current Priority Habitat Management Areas (PHMAs). This inventory includes several disturbance types in addition to those used in the rangewide analyses as outlined in the 2015 LUP disturbance appendices:

Coalbed Methane and Other Energy-Related Retention Ponds

The footprint boundary will follow the fence line and includes the area within the fence line surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.

Meteorological Towers

This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.

Nuclear Energy Facilities

The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

Airport Facilities and Infrastructure (Public And Private)

The footprint boundary will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.

Military Range Facilities and Infrastructure

The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility's perimeter.

Hydroelectric Plants

The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

Recreation Areas and Facilities

This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Where this inventory is complete in GRSG habitat and if the digitization is within an acceptable timeframe (i.e. not deemed outdated), these disturbance data will also be used to evaluate the existing disturbance footprint and density of development.

Rangewide Habitat Degradation and Development Intensity Data Combination and Calculation Approaches

The threats targeted for measuring human activity (**Table 3-4**) and intensity of activities will be converted to direct area of influence polygons as described for each data source above. These threat polygon layers will be combined to create one overall polygon layer representing footprints of estimated active human activity in GRSG habitat. Individual datasets, however, will be preserved to indicate which types of threats may be contributing to overall habitat degradation. For intensity calculations, source data locations will be preserved with no additional removal beyond the methodology described above. Thus, overlapping inputs will be retained such that the density calculation reflects an overall intensity of development.

More complex disturbance and density estimation approaches may also be implemented, leveraging datasets described above, to facilitate a more complete picture of the level anthropogenic disturbance within GRSG habitat and potential impacts to GRSG habitats. For example, moving window analyses, which estimate development density within multiple spatial extents, can facilitate an understanding of potential direct and indirect effects of development on GRSG habitats (e.g., Decker et al. 2014 and Leinwand, I., N. B. Carr, and D. J. A. Wood 2016).

Measure 2a: What is the estimated amount of habitat degradation rangewide and the estimated change in the amount?

Within GRSG habitats, divide the combined estimated area of the active/direct footprint by the total area of GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents (percent disturbance in GRSG habitats).

Measure 2b: What is the estimated density of energy development activities and the change in the estimated density?
Within GRSG habitats, divide the total count of energy and mining locations (identified in **Table 3-4**) by the total area of GRSG habitat at spatial scales relevant to BLM LUP decisions and management, for example, at HAF fine-scale extents. The resulting density will be reported in units of "count per square mile".

Measure 2c: Were any disturbance or density caps above project scale exceeded?
Leveraging the outcomes of analyses performed to answer 2a and 2b, summaries of any disturbance or density caps, as articulated in each LUP, will be created.

Measure 2d: What is the amount of reclaimed energy-related degradation on BLM lands and the change in the amount?
Currently no single data repository exists which captures BLM's reclamation accomplishments in a spatial manner. As data becomes available depicting reclamation activities in sage-grouse habitats, they will be summarized.

Measure 3: GRSG Habitat Suitability

Measure 3.a. What is the status of GRSG habitat assessments at the mid-, fine- and site-scales across the range?
BLM will provide a rangewide summary of the total number of GRSG habitat assessments at the mid-, and fine-scales that are either completed or underway.

Measure 3.b. What is the suitability of GRSG habitats at mid- and fine- spatial scales?
BLM will summarize the results of the completed mid- and fine-scale assessments across the range of GRSG. Site-scale summaries are addressed in the LUP section of the BLM Revised GRSG Monitoring Framework.

Measure 4: Achievement of LHS in GRSG Habitat

Measure 4.a. How many acres were evaluated for achievement of the SSS/WL LHS in GRSG habitat across the range?
BLM will evaluate LHS on BLM-managed lands that contain GRSG habitat. Reporting will include the number of acres evaluated in the reporting period, evaluated prior to the reporting period, and not evaluated.

Measure 4.b. For areas that have been evaluated in GRSG habitat, what is the status of land health and what are the causes of non-achievement (as applicable)?
BLM will summarize the results of land health assessments (or functional equivalent) conducted within the reporting period as follows: achieving, making progress towards achieving, or not achieving LHS. Further, BLM will summarize the causes for not achieving land health when a causal factor analysis has been completed. As available, management responses will also be summarized.

Measure 5: BLM On-The-Ground Conservation and Restoration Efforts for GRSG

Measure 5.a. How many acres/miles were conserved or restored by treatment or action type in GRSG habitat?
BLM implements a variety of efforts to conserve and restore GRSG habitat. These efforts range from conifer removal and habitat restoration to riparian exclosures and fence modifications. BLM will use several existing databases to summarize the number of actions and number of acres/miles of conservation efforts by type.

Measure 6: GRSG Population Trend Rangewide

Measure 6.a. What is the rangewide average annual population trend?
The BLM will report rangewide population trends for GRSG. For rangewide populations trends, the BLM will report results from the most current version of the *Range-wide Population Trend Analysis for Greater Sage-*

Grouse (Centrocercus urophasianus) conducted by the USGS (e.g., Coates et al. 2022). This analysis estimates annual rangewide populations trends using these scales:

- Range-wide average annual trend
- Range-wide cumulative trend across three time periods:
  - Short (two oscillations, ~19 years)
  - Medium (four oscillations, ~35 years)
  - Long (six oscillations, ~55 years)

3.3 SECTION II: LUP IMPLEMENTATION MONITORING

3.3.1 Introduction

One key goal of monitoring BLM LUP implementation is to produce data and information to inform the GRSG portion of BLM LUP evaluations (as required by 43 CFR 1610.4-9 and the BLM H-1601-1 Land Use Planning Handbook). This section of the GRSG Revised Monitoring Framework describes the monitoring methodology for BLM to implement three types of monitoring and reporting across GRSG planning areas in 10 western states (California, Colorado, Idaho, Montana, North Dakota, Nevada, Oregon, South Dakota, Utah, and Wyoming):

- LUP implementation monitoring focuses on the primary cross-cutting GRSG conservation commitments (LUP objectives, decisions, and desired conditions) contained in the BLM 2025 GRSG LUP Amendments.
- Planning area GRSG habitat monitoring focuses on assessing suitability of habitat at the mid-, fine- and site scales. Planning area habitat monitoring also focuses on GRSG habitat availability to determine the status of BLM adaptive management habitat thresholds.

Planning area population monitoring focuses on GRSG population trends (tracked in partnership with state wildlife agencies and similar entities) to determine the status of BLM adaptive management population thresholds.

This Revised GRSG Monitoring Framework builds on the BLM's experience of annual monitoring and reporting on the first 5 years of GRSG BLM LUP implementation (2016 to 2020) published in the 5-year monitoring report (BLM Rangewide Monitoring Report, Herren et al. 2021). The structure for this section of the framework carries forward the monitoring questions from the Greater Sage-Grouse Monitoring Framework (Interagency Disturbance and Monitoring Subteam, May 2014) that have been modified to reflect the data, methods and information that has become available since 2015. Two additional monitoring questions have been added. The six monitoring questions are summarized in **Table 3-5**.

Table 3-5. The Six LUP Monitoring Measures, Associated Sub-Measures, Monitoring Questions and Data Sources for BLM Monitoring of GRSG Habitat Conditions and Population Trends

Measures	Monitoring Questions	Data
Measure 1: Status of GRSG habitat suitability within the planning area relative to the LUP objectives		
Measure 1a: Site-scale habitat suitability	What are the seasonal habitat suitability ratings as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised) and the combination of site-scale indicators?	State Office and National tracking of completed habitat assessments.

Measures	Monitoring Questions	Data
Measure 1b: Mid- and fine-scale habitat suitability	What are the mid- and fine-scale suitability ratings for GRSG habitats that overlap with the planning area as assessed by the mid- and fine-scale indicators?	State Office and National tracking of completed habitat assessments.
Measure 1c: Status of habitat assessments	What is the status of habitat assessments completed within the planning area?	State Office and National tracking of completed habitat assessments.
Measure 2: SSS/WL standard being achieved, or making progress towards being achieved, in allotments that contain GRSG habitats where evaluations have been completed since the 2024 Record of Decision within the planning area		
Measure 2a: Achieving, making progress towards achieving, or not achieving the SSS/WL standard	What is the number of allotments evaluated in the planning area and how many are achieving, making progress towards achieving, or not achieving the SSS/WL standard?	State Office and National tracking of completed land health evaluations.
Measure 2b: If grazing allotments include areas that are not achieving the standard and current grazing was identified as a significant causal factor	How many livestock grazing authorizations or allotments had management adjusted and what type of action was taken?	State Office tracking of grazing authorizations.
Measure 2c: If grazing allotments include areas that are not achieving the standard and current grazing was identified as a significant causal factor	How many permits/leases include an adaptive management strategy that incorporates specific thresholds and defined responses?	State Office tracking of grazing authorizations.
Measure 3: BLM LUP disturbance and density measures (e.g., surface disturbance caps)		
Measure 3a: Disturbance Caps	Were the disturbance caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the disturbance cap were authorized and why?	State office tracking of authorizations requiring a disturbance cap. Surface Disturbance and Reclamation Tracking Tool (SDARTT) or State managed disturbance databases.
Measure 3b: Density Caps	If applicable, were the density caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the density cap were authorized and why?	State office tracking of authorizations requiring a disturbance cap. SDARTT or State managed disturbance databases.
Measure 4: BLM LUP Adaptive Management habitat or population thresholds		
Measure 4a: Count of tripped thresholds	How many soft or hard BLM LUP adaptive management habitat or population thresholds were tripped in the planning area annually?	State office tracking of adaptive management thresholds.
Measure 4b: Count of untripped/reversed thresholds	How many thresholds were reversed ("untripped") annually in the planning area?	State office tracking of adaptive management thresholds.
Measure 4c: Responses to tripped thresholds taken by BLM	In areas where thresholds were tripped or untripped, what responses as described in the BLM LUP were taken initially? Were the response implementation actions modified after a causal factor analysis, if applicable?	State office tracking of responses to adaptive management thresholds being tripped or untripped.

Measures	Monitoring Questions	Data
Measure 4d: Status of causal factor analyses	What is the status of causal factor analyses? For completed causal factor analyses, what factors were identified as possible causal factors?	State office tracking of causal factor analysis in response to adaptive management thresholds being tripped.
Measure 5: Compensatory Mitigation		
Measure 5a: Use of compensatory mitigation	How many projects included compensatory mitigation annually? Which projects included compensatory mitigation?	State office tracking of compensatory mitigation.
Measure 6: Use of Waivers, Exceptions, or Modifications (WEMs)		
Measure 6a: Projects where WEMs are granted	Of the stipulations in the LUP developed for GRSG, which projects had a WEM granted? Of these projects, which type of stipulation and in which type of GRSG HMA were the WEMs granted?	State office tracking of WEMs associated with authorizations.

3.3.2 Methods

The following methods, datasets, and reporting units apply to implementation, habitat, and population monitoring across all BLM GRSG planning areas including variations that occur in some BLM GRSG planning areas due to partnerships with the states. Additional monitoring of GRSG conservation commitments may be implemented in BLM planning areas. The following descriptions of monitoring and reporting will be implemented to inform the six measures:

Measure 1: Status of GRSG habitat suitability within the planning area relative to the LUP objectives

Summaries of habitat suitability ratings, as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised), will be aggregated from National and State Office tracking mechanisms.

Measure 1a: What are the seasonal habitat suitability ratings as assessed by the HAF (Stiver et al. 2015, BLM TR 6710-1, as revised) and the combination of site-scale indicators?

The BLM will summarize the results of site-scale assessment reports that overlap with the planning area, reported in 5-year intervals. Example reporting could include proportional area estimates (e.g., 50 percent suitable, 20 percent marginal, 30 percent unsuitable) or plot counting (e.g., 50 plots suitable, 20 plots marginal, 30 plots unsuitable).

Measure 1b: What are the mid- and fine-scale suitability ratings for GRSG habitats that overlap with the planning area as assessed by the mid- and fine-scale indicators?

The BLM will summarize the results of mid- and fine-scale assessment reports that overlap the planning area.

Measure 1c: What is the status of habitat assessments completed within the planning area?

The BLM will summarize and report on the number of completed habitat assessments that overlap the planning area using the BLM National Operations Center tracking system.

Measure 2: SSS/WL standard being achieved, or making progress towards being achieved, in allotments that contain GRSG habitats where evaluations have been completed since the 2024 Record of Decision within the planning area.

Summaries of allotments achieving, making progress towards achieving, or not achieving the SSS/WL standard.

Measure 2a: What is the number of allotments evaluated in the planning area and how many are achieving, making progress towards achieving, or not achieving the SSS/WL standard?
The BLM will use the BLM's LHS database and State Office tracking mechanisms to monitor and report the achievement of the SSS/WL standard in completed land health evaluations in GRSG habitat within the planning area and whether livestock grazing was identified as a significant causal factor in non-achievement.

Measure 2b: For grazing allotments with areas not achieving SSS/WL standard and livestock grazing is a causal factor, how many livestock grazing authorizations or allotments had management adjusted and what type of action was taken?
The BLM will use available BLM databases and State Office tracking mechanisms to report on the number of livestock grazing authorizations or allotments that had management actions taken in each planning area. BLM Field, District, and State Offices will coordinate to report on the type of actions taken (e.g., changes to season of use or amount of use, changes to infrastructure).

Measure 2c: For grazing allotments with areas not achieving SSS/WL standard and livestock grazing is a causal factor, how many permits/leases include an adaptive management strategy that incorporates specific thresholds and defined responses??
BLM Field, District, and State Offices will coordinate to report on the number of permits/leases that were modified to incorporate an adaptive management strategy that includes specific thresholds and defined responses in each planning area.

Measure 3: BLM LUP disturbance and density measures (e.g. surface disturbance and density caps)
The BLM field offices will use disturbance tracking databases (e.g., SDARTT) or other methods to track the amount of disturbance authorized by the BLM. The BLM State Offices/BLM National Operations Center will compile the results and summaries of habitat disturbance calculations conducted at the project and larger scale management areas within the planning area to include in monitoring reports.

Measure 3a: Were the disturbance caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the disturbance cap were authorized and why?
For projects that exceeded the disturbance cap, the BLM State Offices will identify those projects, and the reason(s) why the disturbance cap was exceeded using available databases and project records (e.g., National Environmental Policy Act of 1969 [NEPA] documents).

Measure 3b: If applicable, were the density caps for BLM authorizations exceeded at any scale in GRSG HMAs in the planning area? If so, which projects that exceeded the density cap were authorized and why?
If the LUP includes a cap on the density of anthropogenic disturbances, the BLM SOs will identify the projects that were authorized which exceeded the density cap and provide the reason for the exceedance using available databases and project records (e.g., NEPA documents).

Measure 4: BLM LUP Adaptive Management habitat or population thresholds
BLM State Offices will complete adaptive management threshold and causal factor (as required) analyses annually as described in each LUP.

Measure 4a: How many soft or hard BLM LUP adaptive management habitat or population thresholds were tripped in the planning area annually?
BLM State Offices, in coordination with BLM Field and District Offices, will report on annual calculations and counts of LUP adaptive management thresholds tripped.

Measure 4b: How many thresholds were reversed ("untripped") annually in the planning area?
BLM State Offices, in coordination with BLM Field and District Offices, will report on annual calculations and counts of LUP adaptive management thresholds untripped.

Measure 4c: In areas where thresholds were tripped or untripped, what responses as described in the BLM LUP were taken initially? Were the response implementation actions modified after a causal factor analysis, if applicable?
The BLM State Office, in coordination with BLM Field and District Offices, will summarize and report on the action(s) taken, as described in the LUP, in response to each threshold being tripped or reversed.

Measure 4c: What is the status of GRSG causal factor analyses? For completed causal factor analyses, what factors were identified as possible causal factors?
The BLM State Office, in coordination with BLM Field and District Offices, will summarize the number and status of causal factor analyses required in response to adaptive management thresholds being tripped or untripped as required in the LUP. For completed causal factor analyses, the BLM State Office, in coordination with BLM Field and District Offices, will also report on the identified causal factors (if known) and the responses or implementation actions taken to address the causal factors if different than those taken in response to a threshold being tripped or untripped (as applicable).

Measure 5: Compensatory Mitigation
BLM State Offices will track the implementation of the use of compensatory mitigation for individual authorizations.

Measure 5a: How many projects included compensatory mitigation annually? Which projects included compensatory mitigation?
The BLM State Office, in coordination with BLM Field and District Offices, will report on the number of authorized projects that included compensatory mitigation and report on which projects included compensatory mitigation.

Measure 6: Use of WEMs
BLM State Offices will track the use of WEMs in GRSG habitat.

Measure 6a: Of the stipulations in the LUP developed for GRSG, which projects had a WEM granted? Of these projects, which type of stipulation and in which type of GRSG HMA were the WEMs granted?
The BLM State Office, in coordination with BLM Field and District Offices, will report on which projects had a WEM granted for the stipulations in the LUP developed for GRSG. Of these projects, the type of stipulation and in which type of GRSG HMA the WEMs were granted will also be reported.

Table 3-6. Example Reporting Structure for WEMs

WEMs granted by BLM by stipulation type and GRSG Habitat Management Type			
Project NEPA ID	**Stipulation Type (No Surface Occupancy, Controlled Surface Use, Timing Limitation)**	**WEM Type (Waiver, Exception, Modification)**	**Habitat Type (PHMA, General HMA)**
Example: NEPA number	Timing Limitation	Exception	PHMA

3.4 SECTION III: EVALUATION OF EFFECTIVENESS

The information collected at the rangewide scale will be used by the BLM to provide a cohesive look at conditions across administrative boundaries. Measures which are analyzed across all lands (vegetation availability and condition, disturbance estimates, etc.) will be also analyzed on BLM managed lands so that BLM management influence on each can be inferred. Similarly, trend analyses and monitoring of changes through time for several measures will facilitate an understanding of BLM's influence on sage-grouse habitats. Conceptually, if rangewide monitoring identifies increasing sagebrush availability and improving vegetation conditions, decreasing disturbance, and a stable or increasing, there is evidence that the BLM's goal to conserve and maintain habitats for healthy populations and connectivity of populations have been met. Conversely, where information indicates that sagebrush is decreasing and vegetation conditions are degrading, disturbance in sage-grouse areas is increasing, and/or populations are declining relative to the baseline, there is evidence that the BLM's goal is not being achieved. Given the variety of measures this Framework outlines, the inherent challenges of establishing cause-and-effect relationships in mixed ownership landscapes and the complexity of population dynamics, such straight forward interpretations are expected to be minimal. To the best of the BLM's ability, factors driving observed changes will be identified and discussed when each measure is examined and synthesized with BLM's role in observed change identified (i.e. were changes due to drought or directly related to BLM's management).

The information collected under the six LUP questions of this monitoring framework will be leveraged in the broader LUP effectiveness evaluation required in 43 CFR 1610.4-9 and as described in the BLM Land Use Planning Handbook (BLM H-1601-1, 2005). BLM State Offices will include sage-grouse specific sections in these evaluations of effectiveness for areas where sage-grouse management goals and objectives are applicable. The complexity of these evaluations may be based on the amount of sage-grouse habitats within the area, known issues within sage-grouse habitats or other factors deemed important by the State Office. The sage-grouse specific components of these evaluations will include, at a minimum, the information collected to inform the six LUP measures. Additional local information that supports or clarifies the conclusions or effectiveness summaries shall also be considered. Information from the range wide effectiveness section of this monitoring framework will be used to inform the effectiveness evaluation at the LUP level as applicable. This information will also be used to place the field office's effectiveness evaluation conclusions in context with how the implementation of sage-grouse management decisions are supporting the overall BLM's goals to conserve and manage GRSG habitats to support persistent, healthy populations, consistent with BLM's sensitive species policy and in cooperation with other conservation partners and maintain existing connectivity between sage-grouse populations. The interdisciplinary team will develop and recommend a suite of actions, as appropriate, the BLM can take to address any conclusions made within the sage-grouse portion of the larger effectiveness evaluation. These recommendations may vary from LUP implementation changes to LUP revisions as described in the Land Use Planning Handbook, section VI.

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APPENDIX A. LANDFIRE ECOLOGICAL SYSTEMS CAPABLE OF SUPPORTING SAGEBRUSH

Table A1. Ecological systems in BpS and EVT capable of supporting sagebrush vegetation and capable of providing suitable seasonal habitat for GRSG.

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability of Producing	Sagebrush (SB) or Sagebrush Associated (SBA)
Colorado Plateau Mixed Low Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longiloba* *Artemisia bigelovii* *Artemisia nova* *Artemisia frigida* *Artemisia tridentata* ssp. *wyomingensis*	SB
Columbia Plateau Low Sagebrush Steppe	*Artemisia arbuscula* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova*	SB
Columbia Plateau Scabland Shrubland	*Artemisia rigida*	SBA
Columbia Plateau Steppe and Grassland	*Artemisia* spp.	SBA
Great Basin Xeric Mixed Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longicaulis* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis*	SB
Inter-Mountain Basins Big Sagebrush Shrubland	*Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis*	SB
Inter-Mountain Basins Big Sagebrush Steppe	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *tripartita* *Artemisia frigida*	SB
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Woodland	*Artemisia tridentata* ssp. *vaseyana* *Artemisia arbuscula* *Artemisia tridentata*	SBA
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Shrubland	*Artemisia tridentata* ssp. *vaseyana* *Artemisia arbuscula* *Artemisia tridentata*	SBA
Inter-Mountain Basins Mixed Salt Desert Scrub	*Artemisia tridentata* ssp. *wyomingensis* *Artemisia spinescens*	SBA
Inter-Mountain Basins Montane Sagebrush Steppe	*Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia nova* *Artemisia arbuscula* *Artemisia tridentata* ssp. *spiciformis*	SB
Inter-Mountain Basins Semi-Desert Shrub-Steppe	*Artemisia tridentata* *Artemisia bigelovii* *Artemisia tridentata* ssp. *wyomingensis*	SBA
Northwestern Great Plains Mixed Grass Prairie	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *vaseyana* *Artemisia frigida*	SBA

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability of Producing	Sagebrush (SB) or Sagebrush Associated (SBA)
Northwestern Great Plains Shrubland	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *wyomingensis*	SBA
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	*Artemisia tridentata*	SBA
Rocky Mountain Lower Montane-Foothill Shrubland	*Artemisia nova* *Artemisia tridentata* *Artemisia frigida*	SBA
Western Great Plains Sand Prairie	*Artemisia cana* ssp. *cana*	SBA
Wyoming Basins Dwarf Sagebrush Shrubland and Steppe	*Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *rupicola*	SB
Artemisia tridentata ssp. *vaseyana* Shrubland Alliance (EVT only)	*Artemisia tridentata* ssp. *vaseyana*	SB
Quercus gambelii Shrubland Alliance (EVT only)	*Artemisia tridentata*	SB

APPENDIX B. DATA ACCURACY ASSESSMENTS FOR LANDFIRE AND RCMAP

LANDFIRE Agreement Assessment

In the monitoring framework we will use the most recent version of LANDFIRE EVT data (EVT 2.2.0) which currently is based on the 2016 EVT Remap with updates due to disturbances. The 2016 EVT Remap data were reviewed using agreement assessments that compared individual sample field plots with EVT classes for pixels at plot locations using the Auto-Key EVT assignment. The plot data used for the agreement assessment was not used in the 2016 remap process by LANDFIRE so this was formulated as the most independent and robust test possible for the data. More details of this process are here: https://landfire.gov/remapevt_assessment.php.

Agreement assessments of all classes of data in northwest (NW) and southwest (SW) GeoAreas provide overall results of 47 percent and 42 percent respectively (**Table B1**). However, for GRSG purposes we also aggregated all classes into sagebrush (SB), sagebrush associated (SBA), or nonhabitat using LANDFIRE's process of collapsing categories. This aggregation caused the agreement assessments to increase substantially for both the NW and SW GeoAreas (**Table B1**).

Table B1. Agreement assessments of sagebrush (SB), sagebrush associated (SBA), nonhabitat, and overall classes in LANDFIRE EVT data showing the increased accuracy estimated when classes are grouped.

GeoAreas	SB	SBA	SB and SBA	Nonhabitat	Overall
NW	85%	49%	86%	92%	47%
SW	75%	45%	71%	92%	42%

RCMAP Accuracy Assessment

Rigge et al. (2022) accuracy metrics, using 1860 independent field measurements, are shown in the table under Published. The BLM-conducted accuracy assessment used more than 3,000 data points from the AIM

2.0 database in 2021 and compared them to RCMAP 2020 predictions that used training data to 2019 (Savage and Slyder 2022).

Table B2. Results of RCMAP published and BLM-conducted accuracy assessments (Savage and Slyder 2022).

Indicator	Published			BLM-conducted		
	R2[1]	RMSE[2]	MAE[3]	R2[1]	RMSE[2]	MAE[3]
Annual Herbaceous	0.58	9.8	-	0.13	14.21	7.59
Sagebrush	0.4	7.5	-	0.33	8.41	5.51
Trees	-	-	-	-	-	-

[1] R2 is the coefficient of determination
[2] RMSE is the root mean squared error
[3] MAE is the mean absolute error

APPENDIX C. LITERATURE SUMMARY OF CONIFER EFFECTS ON SAGE-GROUSE

Table C1. Summary of the literature on the effects of conifer cover on GRSG.

Name	% Conifer Cover	Distance/ Area	State	Leks	Nesting	Brood Rearing	No Season Given
Baruch-Mordo et al. 2013	>4%	-	OR	No active leks	-	-	-
Baxter et al. 2017	-	-	UT	-	-	Selected areas far from trees	-
Beers et al. 2022	<2%, <11%, <4%	400m, 800m	NV UT	Summer and breeding Winter Year-round, selected for sagebrush patch contiguity			
Brussee et al. 2022	0%	-	NV	-	-	Preferred no pinyon-juniper to 1-10% conifer	-
Casazza et al. 2011	<5% (threshold was selected by the scientists based on Miller et al 2005)	7.9 ha (20 acre, 160m radius); 226.8 ha (560 acre, 850m radius)	CA	-	-	GRSG avoided pinyon-juniper at large scale, but models were unsuccessful at explaining this	-
Coates et al. 2017	< 2%	-	CA	-	-	-	GRSG tolerate <2% but less may be better for survival
Cook et al. 2017	4% >3 %	1000m 800m	UT	Lower suitability	Lower suitability	-	-

Name	% Conifer Cover	Distance/ Area	State	Leks	Nesting	Brood Rearing	No Season Given
Doherty et al. 2010	-	100m	MT, WY	-	Strong avoidance of conifer within	-	-
Doherty et al. 2016	-	-	MZs	Strong neg relationship between GRSG occurrence and tree canopy cover			
Doherty et al. 2021	>3%	560m	OR	Lower suitability	-	-	-
Fedy et al. 2014	-	-	WY	GRSG avoided forested areas			
Gibson et al. 2015	>30%, 10-30%	1000m	NV	-	Avoided 10-30% areas were selected	-	-
Nisbet et al. 1983	0%	-	NV UT	Lek model preference for sites with no conifer	-	-	-
Olsen et al. 2021	-	-	OR	GRSG population increased where conifer was removed, suggest limit to <10% cover			
Picardi et al. 2020	-	-	UT	Modeled relationship found that areas with no conifer cover would be selected and areas with high conifer cover would be avoided			
Roth et al. 2022	-	-	NV	-	GRSG selected pinyon-juniper class (1-10%) was below average	-	-
Sandford et al. 2017	>4%	-	UT	-	Less suitable for nesting habitat	-	-
Severson et al. 2017	>3%, >4%	800m	OR	-	Lower suitability, Marginal/unsuitable	-	-
Westover et al. 2016	-	-	UT	GRSG avoided areas with high percentage of trees GRSG broods found further from trees			

Appendix 4

Greater Sage-Grouse Habitat Indicators and Benchmarks

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Appendix 4. Greater Sage-Grouse Habitat Indicators and Benchmarks

4.1 Incorporating the Best Available Science into the Habitat Assessment Framework Process

The Habitat Assessment Framework (HAF/ BLM TR 6710-1, as revised) provides a standardized, scientifically based methodology to assess sage-grouse habitat suitability at multiple scales (broad, mid, fine, and site-scales, Levels 1, 2, 3 and 4 respectively). Habitat suitability occurs along a gradient ranging from unsuitable to suitable and is rarely uniform within and across the scales. Using multi-scale evaluations is important for assessing GRSG habitat by considering the entire suite of conditions that contribute to high quality habitat, the success of past conservation actions, and prioritizing future land uses and conservation actions. Descriptions of the scales of habitat selection (broad-, mid-, fine-, and site-) and the associated indicators for habitat assessment at each scale are available in the HAF (BLM TR 6710-1, as revised).

4.2 Habitat Indicators and Benchmarks for Site-Scale HAF

The vegetation characteristics associated with site-scale habitat suitability vary across the range of GRSG. For example, characteristics (both indicators and benchmarks) in the grasslands of Montana are different than the characteristics in the sagebrush shrublands in the southern Great Basin of Utah and Nevada. The HAF technical reference includes general site-scale forms for the indicators and benchmark values for suitable site scale habitat ratings. The indicators and benchmark values used in these forms at the site scale should be updated to incorporate the best available research related to habitat suitability applicable to the regional and local variability.

The Habitat Indicators Table (**Table 4-1**) provide a list of indicators and benchmarks, derived from local and regional research on GRSG habitat selection, that collectively are used to inform habitat suitability. These indicators and benchmarks have been updated from those in the HAF based on more recent and localized research. BLM Utah will use the indicators and benchmarks in **the table below** to assess each monitoring location within seasonal habitats for site-scale suitability, with data collected during the appropriate corresponding seasonal use period, as applicable to address phenological changes. Not all areas within a given habitat management area will be capable of meeting the identified seasonal habitat values in the Habitat Indicators Table due to inherent variation in vegetation communities and ecological potential. Habitat Indicators and Benchmarks are habitat conditions that are based on habitat selection that may not be achievable or applicable in all areas. Site-specific benchmarks must be based on the site's ecological potential informed by ecological site descriptions and associated state-and-transition models and the site's current ecological state.

When completing site-scale assessments, **it is *inappropriate* to use a single indicator** from **Table 4-1** or the HAF habitat suitability form to determine overall habitat suitability of the plot (i.e., suitable, marginal, or unsuitable) unless sagebrush is absent or limiting. Instead, BLM staff must consider all the indicators using multiple lines of evidence, as described in the HAF and in the training materials, to determine the plot's overall habitat suitability. The measured habitat indicator values will vary seasonally, driven largely by use and environmental conditions (e.g., ecological site potential of the monitoring plot), including factors such as annual rainfall, drought, annual production, and natural disturbances, such as high intensity wildfires and flooding. In addition, a site may not meet the suitable rating if many indicators are impacted by annual climate

variability (e.g., drought conditions), which is independent of management. Thus, it is critical to document environmental factors when completing the habitat suitability forms. This information is essential to inform land health assessments and evaluations. Factors to inform assessments and evaluations could also include grouping portions of the landscape based on ecological characteristics that influence their impact to and recovery from changes on the landscape (e.g., fire, drought and other extreme weather events, insect outbreaks, soil disturbance, etc.). Use of such disturbance response groupings (considering disturbance in the ecological sense, not based on the RMP disturbance cap) may also be appropriate to scale ecological site descriptions for larger planning areas and provide context to HAF assessments (Stringham et al. 2016).

Indicators are assessed following the methods described in the Sage-grouse Habitat Assessment Framework. BLM will leverage the terrestrial Assessment, Inventory, & Monitoring (AIM) methods (Herrick et al. 2021), additional monitoring approaches for wetland & riparian habitats, credible partner data, and supplemental long-term monitoring data and guidelines developed by the BLM to collect data on site-scale habitat condition (**Table 4-1**). Not all monitoring locations within a given seasonal habitat area will be able to achieve all suitable benchmark values in the Habitat Indicators Table due to the inherent variation in vegetation communities and ecological site potential. The intent is not to meet all habitat requirements at all monitoring locations, but to provide seasonal habitat requirements sufficiently across the landscape. Marginal or unsuitable ratings may still provide, or have the capacity to provide, one or more of the habitat components.

As additional research becomes available, new data could continue to refine or clarify GRSG selection for vegetation structure and composition in seasonal habitats for certain populations. Because of this, the Habitat Indicators Table was updated for this effort and will be periodically reviewed to incorporate the best available science in coordination with applicable federal, state, local, and tribal agencies. The values provided in **Table 4-1**, as updated, will be used for HAF assessments. The addition or adjustment to indicators or benchmarks in the Habitat Indicators Table must include the reference or basis for which the changes are made. Edits should only be made if warranted by scientific evidence, in coordination with the applicable state agency.

Table 4-1. Utah GRSG Habitat Indicators Table

Attribute	Indicators	Benchmarks	Reference
Breeding and Nesting (February 15-June 15)			
Lek Security	Proximity to conifers	Conifers are absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks.	Stiver et al. 2015 Baruch-Mordo et al. 2013 Connelly et al. 2000
	Proximity of sagebrush to leks	Has adjacent sagebrush cover.	Stiver et al. 2015
Cover	Sagebrush cover	Low [2]: ≥ 7% Mid [3]: ≥ 18% High [4]: ≥ 14%	Dahlgren et al. 2019
	Total shrub cover	Low [2]: ≥ 17% Mid [3]: ≥ 22% High [4]: ≥ 19%	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019
	Sagebrush Composition	Low [2]: ≥ 36% Mid [3]: ≥ 71% High [4]: ≥ 83%	Dahlgren et al. 2019
	Shrub height	Low [2]: ≥ 12 inches (30 cm) Mid [3]: ≥ 5.9 inches (15 cm) High [4]: ≥ 9 inches (23 cm)	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019

Attribute	Indicators	Benchmarks	Reference
Cover *(cont.)*	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality)	Low [2]: ≥ 5% Mid [3]: ≥ 4% High [4]: ≥ 8%	Conway et al. 2025 Smith et al. 2020 Dahlgren et al. 2019 Smith et al. 2018 Stiver et al. 2015 Connelly et al. 2000
	Perennial grass and forb height (includes residual grasses)	Provide overhead and lateral concealment from predators.[5]	Conway et al. 2025 Smith et al. 2020 Dahlgren et al. 2019 Smith et al. 2018 Stiver et al. 2015 Connelly et al. 2000
	Perennial forb canopy cover	Low [2]: ≥ 2% Mid [3]: ≥ 1% High [4]: ≥ 4%	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019
	Invasive annual grass cover	<2% cover	BLM synthesis of research [7]
	Conifer	0 (Absence of conifer)	BLM synthesis of research[8]
Brood-Rearing/Summer (April 15-August 15) [1]			
Cover	Sagebrush cover	Low [2]: ≥ 4% Mid [3]: ≥ 16% High [4]: ≥ 15%	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019
	Total shrub cover	Low [2]: ≥ 10% Mid [3]: ≥ 19% High [4]: ≥ 17%	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019
	Sagebrush Composition	Low [2]: ≥ 28% Mid [3]: ≥ 77% High: ≥ 77%	Dahlgren et al. 2019
	Shrub height	Low [2]: ≥ 10.25 inches (26 cm) Mid [3]: ≥ 4.3 inches (11 cm) High [4]: ≥ 8 inches (20 cm)	Stiver et al. 2015 Connelly et al. 2000 Dahlgren et al. 2019
	Perennial grass cover	Low [2]: ≥ 5% Mid [3]: ≥ 6% High: ≥ 8%	Dahlgren et al. 2019
	Perennial forb cover	Low [2]: ≥ 2% Mid [3]: ≥ 2% High [4]: ≥ 6%	Dahlgren et al. 2019
	Riparian areas/mesic meadows	Proper Functioning Condition	
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present [6]	Stiver et al. 2015
	Invasive annual grass cover	<2% cover	BLM synthesis of research[7]
	Conifer	0 (Absence of conifer)	BLM synthesis of research [8]
Winter (November 15-March 15) [1]			
Cover and Food	Sagebrush cover above snow	≥10%	Stiver et al. 2015 Connelly et al. 2000
	Shrub height	Low [2]: ≥ 12 inches (30 cm) Mid [3]: ≥ 5.9 inches (15 cm) High [4]: ≥ 9 inches (23 cm)	Connelly et al. 2000
	Conifer	0 (Absence of conifer)	BLM synthesis of research [8]

Notes:
[1] Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, and long and/or heavy winter), in coordination with the appropriate State of Utah agency.
[2] Low is equivalent to the *Low* cluster from Dahlgren et al. 2019. It covers lower elevation areas (~1,200–2,200 m) in Utah, consisting primarily of Wyoming big sagebrush communities, with some basin big sagebrush included.
[3] Mid is equivalent to the *Parker* cluster from Dahlgren et al. 2019. It occurs primarily on the plateau of Parker Mountain (~2,300–2,800 m) in south-central Utah, dominated by black sagebrush communities.[4] High is equivalent to the *Wasatch* cluster from Dahlgren et al. 2019. It covers mid- to high-elevation areas (~2,200–3,000 m) in Utah, consisting primarily of basin (mid-elevation) and mountain big sagebrush (high elevation), as well as other mesic and higher elevation vegetation communities.
[5] Specific height requirements needed to meet the objective will be set at the time of watershed assessments.

[6] Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.
[7] BLM synthesis of research on the impacts invasive annual grasses have on sage-grouse habitat suitability (**Attachment 4-1**)
[8] BLM synthesis of research on the impact conifer have on sage-grouse habitat suitability (**Attachment 4-2**)

4.3 USING THE HABITAT INDICATORS TABLE

The Habitat Indicators Table is to be used as follows:

- To inform habitat suitability at one point in time, as defined by the processes described in the Habitat Assessment Framework and BLM HAF Implementation Guidelines.
- To inform measurable project objectives during implementation-level planning for BLM-permitted and BLM-initiated actions in HMAs, as applicable.
- To inform agency decision-makers regarding consideration of whether a project or proposal should be approved, denied, or modified based on how it would affect an area's existing habitat suitability status.

Additional guidance on the use of the Habitat Indicators Table and the associated products is available in the Habitat Assessment Framework (Stiver et al. 2015, BLM TR 6710-1, as revised) and BLM Sage-grouse HAF Implementation Guidelines.

When assessing seasonal habitat suitability, the BLM will summarize and report the number of monitoring locations, or amount of seasonal habitat in the analysis area, that are suitable, marginal, or unsuitable. Based on the monitoring locations rated as suitable, marginal, or unsuitable and the documentation of conditions across the entire analysis area such as ecological site potential (using appropriate ecological site descriptions, State and Transition Models, reference sheets, etc.), weather, and land ownership patterns, the BLM will determine if a given seasonal habitat is a limiting factor for sage-grouse. All rationale will be documented in a HAF summary report.

Relationship of the Habitat Indicators Table to other assessment and planning tools

The indicators and benchmarks in the Habitat Indicators Table are meant to inform the wildlife and/or sensitive species component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2; **Figure 4-1**). The Habitat Indicators are not land health standards and do not replace land health assessments. The indicators relating to vegetative cover are assessed using AIM methodology (Herrick et al. 2021). The HAF, GRSG Monitoring Framework (see **Appendix 3**), and land health assessments all incorporate AIM data to monitor existing conditions and track changes over time. The Land Use Plan (LUP) indicators use AIM methods to measure several of the GRSG habitat indicators.

Table 4-2. Relationships of LUP, HAF, LHS and MF to the GRSG Habitat Objectives

Land Health Standards (LHS) Evaluation	Land Use Plan (LUP)	GRSG Habitat Assessment Framework (HAF)	GRSG Monitoring Framework (MF)
Evaluates if the sage-grouse portion of the Special Status Species Land Health Standard is achieved or significant progress towards achievement is made. These evaluations utilize HAF results along with other data.	Sets GRSG habitat objective(s) and Identifies the GRSG habitat indicators (see **Table 4-1** above) and benchmarks from best available science for evaluating progress toward meeting the objective	Provides methods to assess GRSG habitats using the LUP indicators and benchmarks from this appendix (see **Table 4-1** above)	Provides framework for reporting progress toward achieving the objective(s) of the LUP

4.4 INAPPROPRIATE USES OF THE HABITAT INDICATORS TABLE

- Using the indicator value(s) as default desired conditions to inform LUP effectiveness without considering the current state compared to ecological potential of the site and relevant local information where measurements were taken.
- Using a single measured indicator value such as grass height to determine sage-grouse habitat suitability.
- Using a single indicator as a criterion to modify grazing management or any other use.
- Adjusting use authorizations based on measured indicator values without adequate monitoring data.
- Adjusting use authorizations before determining whether the change will help move towards suitable habitat.

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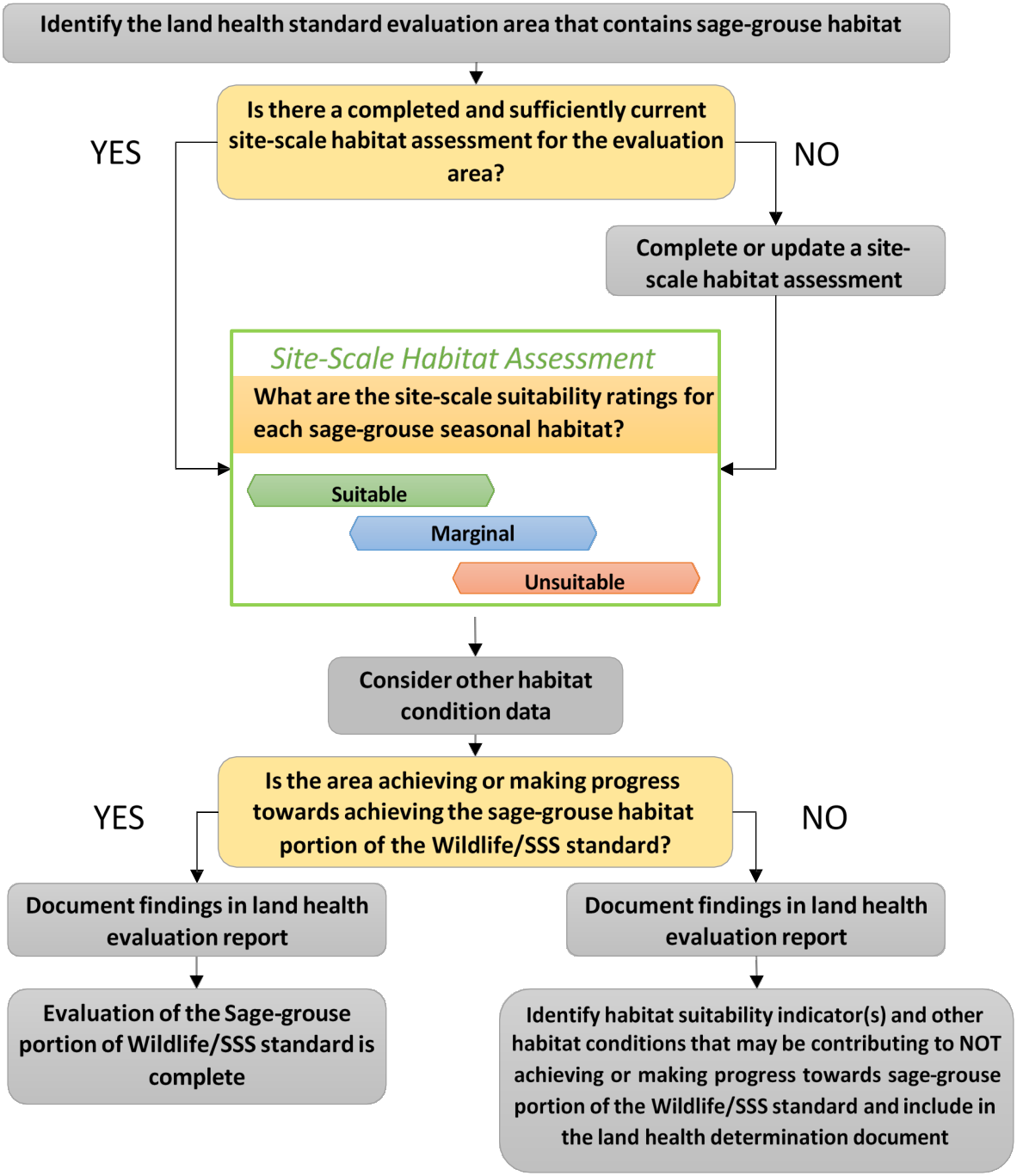
Figure 4-1. Flowchart on Incorporating the Results of Site-Scale Sage-Grouse Habitat Assessment* into Wildlife/SSS Standard in the Land Health Assessments and Evaluations**



Acronyms:

SSS – Special Status Species
* Following the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015)

**For the complete land health standards evaluation and causal factor determination workflow, refer to: Kachergis, E., N. Lepak, M. Karl, S. Miller, and Z. Davidson. 2020. Guide to Using AIM and LMF Data in Land Health Evaluations and Authorizations of Permitted Uses. Tech Note 453. U.S. Department of the Interior, Bureau of Land Management, National Operations Center, Denver, CO.

Attachment 4-1. Justification for Invasive Annual Grass as a Habitat Suitability Indicator at the Sage-grouse Habitat Assessment Framework (HAF) Site-Scale

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Finalized on: October 12, 2023

BACKGROUND

Invasive annual grasses, such as cheatgrass, medusahead, and ventenata species, are a recognized threat to sagebrush ecosystems (Chambers et al. 2016, Remington et al. 2021, Rowland et al. 2019) causing reduced ecosystem function, displacement of native vegetation, increased fire risk and reduced rates of post-fire recovery (D'Antonio and Vitousek 1992, Bradely et al. 2018) all of which can lead to degradation and/or loss of sage-grouse habitat (Nelle et al. 2000, Wik et al. 2002, Coates et al. 2015, Coates et al. 2016, Lockyer et al. 2015, Steenvoorden et al 2019, Brussee et al. 2022, Poessel et al. 2022). The Bureau of Land Management (BLM) uses the Sage-grouse Habitat Assessment Framework (HAF; Stiver et al. 2015) to assess sage-grouse habitat suitability at multiple spatial scales (mid-, fine- and site-scale) by examining scale-specific indicators that represent both habitat requirements (i.e., food, water, cover, security) and threats to habitat (i.e., anthropogenic disturbances, proximity of trees to leks). However, invasive annual grasses are not included as an indicator of habitat suitability at any scale of the HAF (Stiver et al. 2015). This omission has been recognized by both authors and implementors of the HAF as a shortcoming that should be remedied, as supported by scientific literature.

The purpose of this document is to:

- Provide scientifically based rationale for including invasive annual grass cover as an additional indicator in HAF site-scale habitat assessments (Stiver et al. 2015, revised), and
- Recommend scale-specific benchmarks for invasive annual grass cover for HAF site-scale assessments based on scientific literature relevant to that scale.

RATIONALE

Research has shown that invasive annual grasses can reduce habitat suitability for sage-grouse, at the site-scale (i.e., microhabitat), by displacing native vegetation and altering habitat composition and structure (Chambers et al. 2016, Coates et al. 2017, Brussee et al. 2022). This degradation can cause sage-grouse to avoid areas with invasive annual grasses (Lockyer et al. 2015, Coates et al. 2017, Poessel et al. 2022) and can cause lower occupancy and survival rates in areas with invasive annual grasses (Wik et al 2002, Kirol et al. 2012, Lockyer et al. 2015). General speaking, studies have shown that greater sage-grouse will use areas with relatively low amounts of invasive annual grasses for nesting and brood-rearing; however, in areas with relatively higher amounts of invasive annual grasses, rates of occupancy and/or survival are lower (Coates et al. 2017, Dinkins et al. 2016, Lockyer et al. 2015, Schreiber et al. 2015, Stonehouse et al. 2015, Wik 2002).

For example, a study conducted in Nevada and California found that cheatgrass abundance was the single greatest micro-habitat feature distinguishing greater sage-grouse nest sites from random sites in the study area and that average cheatgrass cover at nest sites (7.1%; SE=1.0) was lower than at random sites (13.3%; SE=1.2) (Lockyer et al. 2015). A study in Idaho found that successful nests had lower average cheatgrass cover (1%) than unsuccessful nests (4%) while successful broods had lower average cheatgrass cover (2%) than unsuccessful broods (6%) (Wik et al. 2002). In Nevada and California, a study indicated that > 5% annual grass cover was unsuitable for GRSG during nesting and brood-rearing (Coates et al. 2017). They also recommended suitability categories for invasive annual grasses in nesting habitat specific to xeric sites (<2.5% invasive annual grass cover is suitable, 2.5 – 4.8% is marginal, >4.8% is unsuitable) and mesic sites (<2.5% invasive annual grass cover is suitable, 2.5 – 5.2% is marginal, >5.2% is unsuitable).

Although individual studies reported different values of invasive annual grass cover associated with sage-grouse site selection and nest/brood success, there was notable overlap. In studies that examined site selection (not success), they reported mean values ranging between <1% to 17% cover of invasive annual grasses at used sites (regardless of success), with most reporting <7% cover (**Table 1**). In studies that examined nest and/or brood success relative to invasive annual grasses, they reported mean values between 1% to 7% for successful sites (Wik et al. 2002, Lockyer et al. 2015) (**Table 1**). Of note, some studies have shown that sage-grouse exhibit maladaptive site selection to invasive annual grasses and other habitat indicators due to nest site fidelity (Coates et al. 2017, Brussee et al. 2022, Cutting et al. 2019) so nest/brood success may be a more accurate indicator of the impacts of invasive annual grasses to sage-grouse habitat suitability.

Collectively, this research indicates that invasive annual grasses can reduce habitat suitability for nesting and brood-rearing greater sage-grouse at the site-scale and that habitat suitability generally decreases as invasive annual grass cover increases. It is recommended that invasive annual grass cover be included as a habitat suitability indicator for sage-grouse habitat assessments conducted at the HAF site-scale, as described in the Recommendations section below.

Table 1. The table below lists and describes key aspects and findings from research that has examined the relationship of invasive annual grass cover to greater sage-grouse habitat selection and/or survival at the site-scale (i.e., microhabitat). Note that no studies specifically examined the potential impacts of invasive annual grasses on Gunnison sage-grouse.

Citation	State	Scale/ Extent	Season	Applicable Findings
Coates et al. 2017	NV	10m of nest	Nesting	Mean invasive annual grass cover at nests was 4.8% in xeric sites and 5.1% in mesic sites. Authors recommended suitability categories: • xeric sites (suitable is <2.5%, marginal is 2.5 – 4.8%, unsuitable is >4.8%) and • mesic sites (suitable is <2.5%, marginal is 2.5 – 5.2%, unsuitable is >5.2%)
		10m of brood	Brood-rearing	Mean invasive annual grass cover at brood sites was 4.3% in xeric 4.79% in mesic. Authors recommended suitability categories: • xeric sites (suitable is <2.5%, marginal is 2.5 – 4.3%, unsuitable is >4.3%) and • mesic sites (suitable is <2.5%, marginal is 2.5 – 4.8%, unsuitable is >4.8%)

Citation	State	Scale/ Extent	Season	Applicable Findings
Dinkins et al. 2016	WY	5m of nest	Nesting	Mean invasive annual grass cover at nests 2.14% (SE=0.11) which was higher but similar to random sites with a mean of 1.75% (SE=0.10).
Kirol et al. 2012	WY	8m of nest	Nesting	Nest selection was negatively related to the presence of cheatgrass when compared to available habitat. "Cheatgrass occurred at 6% of the nest locations and 19% of the corresponding random locations."
Lockyer et al. 2015	NV/CA	0.01ha of nest	Nesting	Average cover of cheatgrass at nests and random sites was 7.1% (SE=1.0) and 13.3% (SE=1.2), respectively. Sites with >7.1% cheatgrass cover had lower nest success. Cheatgrass was the single greatest micro-habitat feature distinguishing nests from random sites.
Schreiber et al. 2015	WY	20m of brood	Brood-rearing	Cheatgrass cover was lower at early brood-rearing sites (0.55% +/-0.38%) than at random points (0.71% +/-0.30%) but similar. Cheatgrass cover was lower at late brood-rearing sites (1.44% +/-0.65%) than at random points (2.13% +/-0.72%) but similar.
Stonehouse et al. 2015	WA		Nesting	Mean cover of invasive annual grasses at nest sites was 13% (SE=1); random sites were not assessed.
Wik et al. 2002	ID	20m of nest	Nesting	All nests had an average of 3% cover. Successful nests had lower average cheatgrass cover (1% in 20m transect) than unsuccessful nest (4% in 20m transect).
		20 m of brood	Brood-rearing	All broods had average of 5% cheatgrass. Unsuccessful broods has lower cheatgrass (2% in 20m) at use-sites than successful broods (6% in 20m).
Wing et al. 2014	UT	15m of nest	Nesting	All nest, brood, and non-brooding use sites had cheatgrass which was similar in cover to random sites. Cheatgrass cover means: Nest mean = 17.6% (0.8), Brood mean = 15.6% (0.8), non-brood females and males = 14.3% (0.7), random sites mean = 15.9% (0.8).

RECOMMENDATIONS

Based on the findings of the research summarized above (**Table 1**), invasive annual grass cover should be assessed as a habitat indicator for nesting/early brood-rearing, late brood-rearing, and wintering habitat during a HAF site-scale assessment using the following benchmarks, adjusted as warranted by best available science. Note that these benchmarks were based more heavily on research that examined nest and brood *success* relative to invasive annual grass cover (more so than research that examined *use versus availability* of habitat) because sage-grouse have been shown to exhibit maladaptive site selection (Coates et al. 2017, Brussee et al. 2022, Cutting et al. 2019). Invasive annual grasses are not assessed at the site-scale for leks because the AIM strategy does not include leks in its sampling strategy; however, invasive annual grasses are assessed for lekking habitat at the HAF *fine-scale*. There was not sufficient research to suggest different benchmarks for winter habitat due to a lack of research on winter habitat as compared to nesting and brood-rearing. If future research indicates otherwise, benchmarks may be adjusted accordingly.

Table 2. Recommended habitat suitability benchmarks for assessing invasive annual grass at the HAF site-scale.

Habitat Indicator	Metric	Benchmarks		
		Suitable	Marginal	Unsuitable
Invasive Annual Grass	% cover	<2%	2 – 5%	>5%

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Attachment 4-2. Justification for Conifer as a Habitat Suitability Indicator at the Sage-grouse Habitat Assessment Framework (HAF) Site-Scale

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Finalized on: October 12, 2023

BACKGROUND

Recent research has shown that conifer expansion into native sagebrush communities can reduce habitat suitability for sage-grouse (Nisbet et al 1983, Doherty et al. 2010, Fedy et al. 2014, Doherty et al. 2016, Westover et al. 2016, Baxter et al. 2017, Picardi et al. 2020, Saher et al. 2021, Brussee et al. 2022, Roth et al. 2022). The Bureau of Land Management (BLM) uses the Sage-grouse Habitat Assessment Framework (HAF; Stiver et al. 2015) to assess sage-grouse habitat suitability at multiple spatial scales (mid-, fine- and site-scale) by examining scale-specific indicators that represent both habitat requirements (i.e., food, water, cover, security) and threats to habitat (i.e., anthropogenic disturbances, predation risk). However, conifer cover is not included as an indicator of habitat suitability at any scale of the HAF (Stiver et al. 2015). This omission has been recognized by BLM personnel as a shortcoming of the HAF that should be remedied, as supported by scientific literature.

The purpose of this document is to:

- Provide scientifically based rationale for including conifer as an additional habitat indicator in HAF site-scale habitat assessments (Stiver et al. 2015, revised), and
- Recommend scale-specific thresholds for conifer for HAF site-scale assessments based on scientific literature relevant to that scale.

RATIONALE

Studies that examine site-scale sage-grouse habitat (also referred to as microhabitat) often do not report or analyze conifer as a habitat characteristic, likely because it is not a habitat requirement of sage-grouse but rather a deterrent, especially at such a small scale (e.g., within 10m of a nest site). In a review of over 40 peer-reviewed microhabitat studies on sage-grouse, no study reported conifer cover as a standard microhabitat characteristic for sage-grouse (such as sagebrush cover, grass height, forb cover) nor did they test for a relationship between conifer and sage-grouse. A few studies, such as Duvuvuei 2013 and Wing 2014, reported frequency of nests located under conifer in Utah (see **Table 1**). Wing 2014 reported that nesting under juniper was rare and that only one of those nests was successful. Duvuvuei 2013 showed that nests were commonly placed under junipers, especially by translocated females, but suggested that use of juniper for nesting was due to maladaptation caused by a lack of sagebrush cover and extensive juniper expansion into the study area.

Most studies that examine the potential impacts of conifer on sage-grouse and their habitat are conducted at landscape scales, typically estimating conifer cover near sage-grouse locations (e.g., within 1,000m of a nest site) using remotely sensed landcover data. These studies have established that conifer cover, even in low amounts (e.g., <2 % cover), can negatively impact sage-grouse across all seasons (lekking, nesting, brood-rearing and wintering) causing avoidance and/or reduced vital rates (Nisbet et al 1983, Doherty et al. 2010, Fedy et al. 2014, Doherty et al. 2016, Westover et al. 2016, Baxter et al. 2017, Picardi et al. 2020, Saher et al. 2021, Brussee et al. 2022, Roth et al. 2022). However, these findings are mostly applicable to HAF mid- and/or fine-scale assessments which are also landscape level.

Given the established negative impacts of conifer cover on sage-grouse at landscape scales and the lack of conifer being reported in microhabitat studies (i.e., suggesting avoidance of conifer at site-scales), it is recommended that conifer be included as a habitat suitability indicator for sage-grouse habitat assessments conducted at the HAF site-scale, as described in the Recommendations section below.

Table 1. The table below lists and describes key aspects and findings from research that has examined the relationship of conifer to greater sage-grouse habitat selection and/or survival at the site-scale (i.e., microhabitat). Note that no studies specifically examined the potential impacts of invasive annual grasses on Gunnison sage-grouse.

Name	Tree Type	State	Season	Applicable Findings
Wing 2014	Juniper	UT	Nesting	GRSG females rarely selected juniper as a nesting shrub (n=4) and only one nest was successful.
Duvuvuei 2013	Juniper	UT	Nesting	Translocated GRSG females (24%) nested under juniper but was accredited to lack of sagebrush cover and extensive conifer expansion in study area.

RECOMMENDATIONS

Based on the rationale above, conifer should be assessed as a habitat indicator during HAF site-scale assessments for nesting, brood-rearing, and wintering habitat. Conifer is not being added as an additional indicator in lek assessments because existing lek indicators already incorporate conifer and other trees. The metric used to assess conifer suitability is the count of conifer and, if available, the height of those conifer relative to surrounding sagebrush (or native shrubs, if used as a surrogate), using the benchmarks shown below (adjusted as warranted by best available science). Percent conifer is not recommended as the primary metric for conifer suitability because there is insufficient science to support a benchmark at the site-scale; however, percent conifer cover may still be used as ancillary information, as interpreted by local experts, to support assessment of conifer as a habitat suitability indicator.

Table 2. Recommended habitat suitability benchmarks for assessing conifer at the HAF site-scale.

Habitat Indicator	Metric	Benchmarks		
		Suitable	Marginal	Unsuitable
Conifer	Count	• 0 trees (absence of conifer)	If height is unknown: • 1 tree If height is known: • 1 tree that is taller than local average sagebrush height, and/or • <=3 trees that are not taller than local average sagebrush height	If height is unknown: • >1 tree If height is known: • >1 tree that is taller than local average sagebrush height, and/or • >3 trees that are not taller than local average sagebrush height

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Appendix 5

Livestock Grazing Best Management Practices and Design Features

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Appendix 5. Livestock Grazing Best Management Practices and Design Features

5.1 Livestock Grazing Management Best Management Practices and Design Features

The following best management practices (BMP) provide a list of strategies, practices, or design features to be considered during implementation of the Approved RMP Amendment. These measures are not required to be considered in every instance but can be useful to aid in proper livestock grazing management in GRSG habitats. The applicability and overall effectiveness of each BMP cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some BMPs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations. For example, variations could be required for the following reasons:

- A specific BMP is not applicable to the site-specific conditions of the project/activity.
- An alternative BMP, a state-implemented conservation measure, or plan-level protection provides equal or better protection for GRSG or its habitat.
- A specific BMP will not avoid or minimize impacts to GRSG or its habitat.

5.1.1 Coordination

- 43 CFR 4100 regulations direct BLM to consult, cooperate and coordinate when engaging in program work. The BLM coordinates with Federal, State, county, Indian tribal and local governmental entities, institutions, organizations, corporations, associations, and individuals when authorizing grazing on BLM lands. In GRSG habitat management areas, these communication efforts should include coordination on how livestock grazing practices could be managed across both BLM-administered lands and voluntarily on non-BLM-administered lands, in partnership with interested permittees and lessees, to improve GRSG habitat conditions.

5.1.2 Best Management Practices for Livestock Grazing Management

- Set priorities for grazing management activities (e.g., monitoring, authorization renewals, field checks) following direction in agency policy or implementation guidance. When considering competing priorities in GRSG habitat, considerations should include level of management priority (PHMA vs. GHMA) and focusing on areas where current livestock grazing management is a significant causal factor to not meeting or making significant progress towards meeting Utah's Land Health Standard (LHS) 3, and those containing riparian areas, including wet meadows. Other criteria for prioritization can include the need to respond to urgent natural resource concerns (e.g., fire) and legal obligations.
- When current livestock management practices are determined to not be meeting or making progress towards meeting the LHS 3 (following appropriate consultation, cooperation and coordination, consistent with BLM Handbook H-4180-1), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications, either within the existing terms and conditions or considered as additional alternatives in grazing authorization NEPA analysis as a threshold/response, (not presented in any priority order) could include, but are not limited to, changes in:

  - Season or timing of use;
  - Numbers of livestock;
  - Distribution of livestock use;
  - Duration and/or level of use;
  - Kind of livestock (e.g., cattle, sheep, horses, or goats) (Briske et al. 2011); and
  - Range improvements.
- Locate supplements (salt, mineral, protein, etc.) away from water sources, meadows, riparian areas, swales, and GRSG leks in locations that increase livestock distribution unless effective control of livestock to avoid detrimental impairment of any riparian area or GRSG habitats can be ensured.
- When using salt or mineral supplements, place them outside intact sagebrush stands to reduce impacts to GRSG breeding habitat. For example, place supplements in existing disturbed sites, areas with reduced sagebrush cover, to reduce impacts on GRSG breeding habitat.
- During the lekking season, encourage minimal vehicle use and maintenance activities associated with livestock management during lekking (before 9 am and after 6 pm) within 0.6 miles of an active lek.
- To decrease attracting predators or decreasing water quality, whenever found and wherever possible, remove dead livestock from GRSG habitat and dispose of in ways that does not attract predators to GRSG habitat.. If it is not possible to entirely remove livestock carcasses, they should, at a minimum, be removed from riparian areas and water sources.
- In PHMA and GHMA, areas that have received vegetation treatments should be rested from livestock grazing until resource monitoring data verifies the treatment objectives specific to the purposes of the treatment are being met and an appropriate grazing regime has been developed. Examples of vegetation treatments include seedings, hazardous fuels reduction treatments, emergency stabilization and rehabilitation efforts.
- Avoid disturbing lekking and roosting GRSG from human, guard animal, and sheep activities by trailing, overnighting, watering, and bedding sheep on public lands at least 0.6 miles from active leks (dates of lek activity determined locally, approximately March 15–May 1 in lower elevations and March 25–May 15 in higher elevations).
- When trailing livestock during the lekking or nesting season, use roads or existing trails, to the extent possible.
- When available, use GRSG habitat use-pattern mapping or habitat monitoring to strategically adjust livestock distribution to benefit occupied GRSG breeding habitat, include herding, salting, and water-source management (e.g., turning troughs/pipelines on/off and extending pipelines/moving troughs) in grazing programs.
- Ensure that permittees are informed of management and movement requirements related to avoiding recent burns, habitat rehabilitation, or other restoration sites.
- Identify and, when feasible, establish strategically located forage reserves, focusing on areas where restoration to GRSG habitat is unlikely or lower priority habitat restoration areas.

5.1.3 Design Features for Range Improvements

- When installing new range improvement projects in PHMA, avoid construction during the applicable seasonal use periods associated with lekking, nesting, or brood rearing seasonal habitats (March 1 – July 15, or as identified for local variability in coordination with the state wildlife agency or other appropriate agency with management expertise and authority).
- Use temporary range infrastructure, such as troughs, fences, and supplements, where feasible and appropriate, to meet management objectives.

- Install shutoff valves at spring sources and troughs. Ensure shutoff valves are closed and troughs are drained when livestock are not utilizing the pasture, as consistent with the water laws of the State within which the land is located.
- Install lids on spring collection boxes.
- Install floats in troughs to prevent overflow and keep water at spring sources, as consistent with the water laws of the State within which the land is located.
- Ensure that new and existing livestock troughs and open water storage tanks are fitted with ramps to facilitate the use of and escape from troughs by GRSG and other wildlife; do not use unsecured, unstable, or ineffective items such as floating boards or similar objects.
- Locate troughs outside meadows, swales, and riparian areas.
- Design new water developments to maintain hydrologic function of spring sources, water courses and associated riparian habitat, as consistent with State water laws.
- Consider virtual fencing opportunities, as appropriate.
- To minimize risk of noxious or invasive plant spread, require all heavy equipment used in construction of range improvements to be thoroughly cleaned of all soil and plant material prior to entering public lands.
- To minimize livestock concentration impacts on nesting and early brood rearing sage-grouse, locate new livestock handling facilities (such as corrals) away from active leks and outside of nesting habitat at least by 1.2 miles (Manier et al. 2014). Where corrals already exist, minimize activity to the extent possible to accomplish livestock management objectives outside nesting and early brood rearing season.
- Design new and maintain existing water projects to avoid standing pools of shallow water that could spread West Nile Virus.

5.1.4 Drought Response

- When completing a fully processed grazing authorization in GRSG habitat, incorporate strategies for livestock management during drought conditions.
- During drought conditions use a recognized drought indicator, such as the Drought Monitor, Vegetation Drought Response Index, or Palmer Drought Severity Index, to determine when abnormally dry or drought conditions are developing, present, or easing. When such conditions are developing or present:
  - Conduct pre-season assessments prior to livestock turn out.
  - Monitor vegetation conditions during authorized livestock use periods to determine need for early removal and/or other changes to meet seasonal RMP objectives.
- During drought periods, prioritize evaluating effects of drought in PHMA relative to GRSG needs for food and cover (including riparian areas); ensure that post-drought management allows for vegetation recovery, based on ecological potential, that meets GRSG needs in priority GRSG habitat areas. Where ESDs or STMs are lacking for an area, the best available information to achieve the GRSG needs should be used.
- If livestock grazing is deferred due to drought, reevaluate vegetation and GRSG habitat indicators that measure GRSG habitat prior to reauthorization of grazing.

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Appendix 6

Glossary

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Appendix 6. Glossary

Acquisition. Acquisition of lands can be pursued to facilitate various resource management objectives. Acquisitions, including easements, can be completed through exchange, Land and Water Conservation Fund purchases, donations, or receipts from the Federal Land Transaction Facilitation Act sales or exchanges.

Adaptive management. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

Adjacent (rights-of-way). Installation of authorized improvements parallel, near, or next to existing authorized rights-of-way.

Allocation. The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions.

Amendment. The process for considering or making changes in the terms, conditions, and decisions of approved Resource Management Plans or management framework plans. Usually only one or two issues are considered that involve only a portion of the planning area.

Appropriate Management Level (AML). The appropriate management level (AML) shall be expressed as a population range within which WH&B can be managed for the long term. AMLs previously established as a single number will be modified to include an upper and lower limit. For reporting purposes, the upper limit of the AML range will be used. AML applies to the number of adult wild horses or burros to be managed within the population and does not include current year's foals. All WH&B one year of age and older are considered adults (a foal is considered one year of age on January 1 of the year following its birth). The AML upper limit shall be established as the maximum number of WH&B which results in a TNEB and avoids a deterioration of the range. This number should be below the number that would cause rangeland damage (refer to Animal Protection Institute of America v. Nevada BLM, 118 IBLA 63, 75, (1991)). The AML lower limit shall normally be established at a number that allows the population to grow (at the annual population growth rate) to the upper limit over a 4-5 year period, without any interim gathers to remove excess WH&B. Some HMAs may require more frequent removals to maintain population size within AML. For HMAs that require more frequent gathers, the authorized officer should consider management options which would either extend the gather cycle or broaden the AML range; amend or revise the LUP to remove the area's designation as an HMA; or manage the HMA for non-reproducing wild horses.

Area of Critical Environmental Concern (ACEC). Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. The identification of a potential ACEC shall not, of itself, change or prevent change of the management or use of public lands.

Artifact. A human-modified object, often appearing on an archaeological site, that typically dates to over 50 years in age.

Authorized Officer. Any employee of the BLM to whom authority has been delegated to perform the duties described.

Best management practices (BMPs). A suite of techniques that guide or may be applied to management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a planning decision unless the plans specify that they are mandatory.

Biologically significant unit (BSU). A geographical/spatial area that includes Greater Sage-Grouse priority habitat management areas that is used as the basis for comparative calculations to support evaluation of changes to habitat. In Utah, each BSU correlates to the priority habitat management area within a population area.

Co-location (communication sites). The installation of new equipment/facilities on or within or adjacent to existing authorized equipment/facilities or within a communication site boundary as designated in the Communication Site Plan.

Co-location (electrical lines). Installation of new rights-of-way adjacent to current ROWs boundaries, not necessarily placed on the same power poles.

Co-location (other rights-of-way (ROW). Installing new authorized ROWs within or on the existing footprint of an approved ROW boundary.

Communication site. Sites that include broadcast types of uses (e.g., television, AM/FM radio, cable television, broadcast, translator) and non-broadcast uses (e.g., commercial or private mobile radio service, cellular telephone, microwave, local exchange network, passive reflector).

Controlled surface use (CSU). CSU is a category of moderate constraint stipulations that allows some use and occupancy of public land while protecting identified resources or values and is applicable to fluid mineral leasing and all activities associated with fluid mineral leasing (e.g., truck-mounted drilling and geophysical exploration equipment off designated routes, construction of wells and/or pads). On BLM-administered lands, CSU areas are open to fluid mineral leasing but the stipulation allows the BLM to require special operational constraints, or the activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value.

Cultural resources. The present expressions of human culture and the physical remains of past activities, such as historic buildings, structures, objects, districts, landscapes, and archaeological sites. These resources can be significant in the context of national, regional, or local history, architecture, archaeology, engineering, or culture. They may also include sacred sites and natural features of landscapes that are significant to living communities.

Cultural resource inventories. Both a systematic review of records, files, and archived databases and a survey to determine the past human use of an area.

Cumulative Impact (Effect). The impact on the environment that results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

De-watering. The process of removing surface and ground water from a particular location.

Designated Roads and Trails. Those roads and trails that are specifically identified by the BLM as the only allowable routes for motor vehicle travel in the specific area involved. Travel on designated roads and trails may be allowed seasonally or yearlong. Additional roads or trails may be constructed and authorized for travel as need dictates in conformance with the land use plan or activity plan.

Disposal lands. Transfer of public land out of federal ownership to another party through sale, exchange, Recreation and Public Purposes Act of 1926, Desert Land Entry or other land law statutes.

Disturbance response groups. A process that examines local knowledge, soil mapping data and published literature on soils, plant ecology, plant response to various disturbances, disturbance history of the area, and any other important attributes necessary to sort pre-existing ecological sites into groups of ecological sites based on their responses to natural or human-induced disturbances.

Easement. A right afforded a person or agency to make limited use of another's real property for access or other purposes.

Ecological site. A distinctive kind of land with specific characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation.

Ecological site description. A report that provides detailed information about an ecological site.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geological agents.

Ethnographic resources. Variations of natural resources and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users.

Exchange. A transaction whereby the federal government receives land or interests in land in exchange for other land or interests in land.

Existing habitat. Habitat that currently supports greater sage-grouse, even if not currently occupied. This can include seasonal habitats, such as wintering, nesting and brood-rearing**.**

Exploration. Active drilling, geophysical operations, surface sampling and trenching, or small scale mining or similar activities, to: a. Determine the presence of the mineral resource; or b. Determine the extent of the reservoir or mineral deposit.

Feature. In reference to archaeology, a feature is a collection of one or more contexts representing some non-portable activity, such as a hearth or wall.

Federal mineral estate. Subsurface mineral estate owned by the US and administered by the BLM. Federal mineral estate under BLM jurisdiction is composed of mineral estate underlying BLM lands, tribal lands, privately owned lands, and state-owned lands.

Federal mineral interest. See Federal mineral estate.

Fluid minerals. Oil, gas, coal bed natural gas, and geothermal resources.

Fully Processed Grazing Authorization. A grazing permit or lease that has been issued in accordance with all applicable laws, regulation, and policy including the NEPA, Endangered Species Act (ESA), and decision processes provided in 43 CFR 4160.

General Habitat Management Areas (GHMA). Lands that are, or have the potential to become, occupied seasonal or year-round habitat outside of PHMA, managed to sustain GRSG populations. These areas are defined differentially by state wildlife management agencies, but generally are of poorer GRSG habitat quality with reduced occupancy when compared to PHMA. Some state wildlife agencies have identified areas of GHMA as important for restoration, connectivity, or seasonal habitats. The objective intent for GHMA is to maintain habitat conditions to support GRSG populations consistent with the state agency designations of recovery, connectivity, or seasonal habitats.

Geophysical exploration. Efforts to locate or better define mineral or oil and gas deposits, using geophysical methods such as seismic refraction, electrical resistivity, induced magnetism, or other methods.

Geothermal energy. Natural heat from within the Earth captured for production of electric power, space heating, or industrial steam.

GRSG nesting habitat. Areas with protective grass and high lateral shrub cover where hens nest, typically under sagebrush shrubs.

GRSG early brood-rearing habitat. Upland sagebrush sites relatively close to nest sites, typically characterized by high species richness with an abundance of forb sand insects, where sage-grouse hens raise young chicks (<21 days).

GRSG winter habitat. Sagebrush habitats that provide access to sagebrush above the snow for all food and cover requisite needs.

Habitat. Areas that currently provide GRSG resources (such as space, food, cover, and water) and environmental conditions (such as temperature, precipitation, presence or absence of predators and competitors) that promote occupancy of sage-grouse during a particular stage of its annual life cycle (e.g., breeding, nesting) and allows for them to survive and reproduce.

Habitat Assessment Framework. The Habitat Assessment Framework (HAF) is a tool to measure the suitability of GRSG habitat at multiple scales.

> **Mid-scale HAF areas**. Areas conceptually linked to GRSG dispersal capabilities in population and subpopulation areas as described by Connelly and others (2004). Mid-scale HAF delineations also conceptually provide the life requisite space for GRSG dispersal, allowing for migration movements based on the following key inputs: availability of sagebrush habitat, size and number of habitat patches, connectivity of habitat patches, characteristics of linkage areas between patches, landscape matrix and edge effects, and anthropogenic disturbances.
>
> **Fine-scale HAF areas**. Fine-scale HAF delineations generally describe the extent of all seasonal use areas used by local populations. Fine-scale areas include suitable habitats within home range areas that have contiguous mosaics of sagebrush shrublands or grassland/sagebrush connecting seasonal use areas.

Indicators. Factors that describe resource condition and change and can help the BLM determine trends over time.

Intact landscape. Landscapes with healthy sagebrush ecosystems that have not been disrupted by anthropogenic activities or catastrophic natural events, including invasion by non-native grasses and associated wildfires.

Invasive Species (Invasive Plant Species, Invasives). An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. The species must cause, or be likely to cause, harm, and be exotic to the ecosystem it has infested before considered invasive.

Key areas of critical environmental concern. Special management areas that have been identified as having a high utility for GRSG conservation. These land allocations were designated in previous RMPs to protect other relevant and important resource values; however, they also contain quality GRSG habitat, are within PHMA, and contain leks. They should be priority areas for GRSG management as well as the values for which the ACEC was designated; site-specific ACEC management plans will be prepared at the implementation level.

Key research natural area. A special type of ACEC that was designated in a previous RMP to protect specific intact representative native plant communities. These areas are in PHMA and are used for long term vegetation monitoring of relatively unaltered native plant communities important for GRSG. These areas can provide baseline vegetation information on natural processes such as successional changes, and future vegetation shifts in the plant communities from changes in precipitation and temperature (climate change). Key RNAs either contain GRSG leks or are within 0.1 to 4 miles of leks and are, or likely are, used for nesting, brood-rearing, foraging, breeding or wintering.

Land tenure adjustments. Land ownership or jurisdictional changes. To improve the manageability of BLM-administered lands and their usefulness to the public, the BLM has numerous authorities for repositioning lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges but also through land sales, through jurisdictional transfers to other agencies, and through the use of cooperative management agreements and leases.

Leasable minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. These include energy-related mineral resources such as oil, natural gas, coal, and geothermal, and some nonenergy minerals, such as phosphate, sodium, potassium, and sulfur. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lease. Section 302 of the Federal Land Policy and Management Act of 1976 provides the BLM's authority to issue leases for the use, occupancy, and development of public lands. Leases are issued for purposes such as a commercial filming, advertising displays, commercial or noncommercial croplands, apiaries, livestock holding or feeding areas not related to grazing permits and leases, native or introduced species harvesting, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, ski resorts, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related to irrigation and nonirrigation facilities. The regulations establishing procedures for processing these leases and permits are found in 43 CFR 2920. (BLM)

Lease stipulation. A modification of the terms and conditions on a standard mineral lease form established at the time of the lease sale.

Lek. The BLM is adopting the Western Association of Fish and Wildlife Agencies (WAFWA) lek definitions (Cook et al., 2022)[1].

> **Lek.** A lek is a traditional location where at least 2 male greater sage-grouse congregate during at least 2 springs within a 10-year period to perform their strutting display and opportunistically breed with females. Although males are territorial on leks and occupy an area, not a point, the representative location for the lek is the estimated or calculated center of the display activity. The 'lek' is the standard reporting and analysis unit for evaluating population status and long-term trends.
> **Active lek**. A lek that has more than 2 males counted during two or more lek counts within the last 10 years.
> **Inactive lek**. A lek at which all observations within the last 10 years have been less than 2 males and that has had at least 2 males recorded during a lek count between 11 to 20 years ago.
> **Pending Active lek**. A lek with one observation of at least 2 males in the last 10 years and at least one observation of at least 2 males more than 10 years ago.
> **Sub-lek**. A sub-lek is similar to a lek in most respects, except that its location represents an actual activity center for a specific year or series of years while a lek can represent multiple sub-leks over an extended number of years. Sub-leks are generally ≤¼ the average inter-lek distance from other sub-leks included within the same lek. In relatively static situations, there may be only one sub-lek within a lek. The sub-lek is not used to evaluate population status and long-term trends but may be used to examine breeding behavior, habitat use, or other aspects of natural history
> **Undetermined Lek**. A location where male sage-grouse are displaying that has not been documented in multiple years and does not meet the definition of a lek. Sage-grouse may spontaneously display in an alternate location that is not maintained through time; therefore, any undetermined leks should be verified in subsequent breeding seasons.

Linkage and Connectivity Habitat Management Area (LCHMA). BLM-administered lands that have been identified as broader regions of connectivity important to facilitate the movement of Greater Sage-Grouse and maintain ecological processes.

Linkage Management Area. Areas that have been identified as broader regions of connectivity important to facilitate the movement of GRSG and to maintain ecological processes.

Locatable minerals. Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale (17 Stat. 19-96).

Major Rights of Way. (Refer to definition in Rights of Way)

Mineral. Any naturally formed inorganic material, solid or fluid inorganic substance that can be extracted from the earth, any of various naturally occurring homogeneous substances (as stone, coal, salt, sulfur, sand, petroleum, water, or natural gas) obtained usually from the ground. Under federal laws, considered as locatable (subject to the general mining laws), leasable (subject to the Mineral Leasing Act of 1920), and saleable (subject to the Materials Act of 1947).

[1] Note that the WAFWA definition of lek does not influence how BLM estimates buffers for protection of leks from disturbance (i.e., lek buffers can be measured from the perimeter of the area where males display when perimeters are known and the approach is supported by state wildlife agencies).

Mineral entry. The filing of a claim on public land to obtain the right to any locatable minerals it may contain.

Mineral estate. The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

Mining claim. A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, millsite, and tunnel site.

Mining Law of 1872, as amended. Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the "Mining Law."

Minor Rights of Way. (Refer to definition for Rights of Way).

Mitigation. Includes specific means, measures, or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action; minimizing the impact by limiting the degree of magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitation, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

Modification. A change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may or may not apply to all sites within the leasehold to which the restrictive criteria are applied.

Naturalness. Refers to whether an area looks natural to the average visitor who is not familiar with the biological composition of natural ecosystems versus human-affected ecosystems. New, nonrecreational modifications are not visually obvious or evident from trails.

National Register of Historic Places. A listing of resources that are considered significant at the national, state, or local level and that have been found to meet specific criteria of historic significance, integrity, and age.

Neighborhood Cluster. Represents a GRSG population unit and includes local aggregations of leks and seasonal habitats used by birds attending those leks based on state wildlife agency and research data.

Neighborhood Cluster Scale. Spatial scale used for population trend analyses.

No surface occupancy (NSO). A major constraint where use or occupancy of the land surface for fluid mineral exploration or development and all activities associated with fluid mineral leasing (e.g., truck-mounted drilling and geophysical exploration equipment off designated routes, construction of wells and/or pads) are prohibited to protect identified resource values. Areas identified as NSO are open to fluid mineral leasing, but surface occupancy or surface-disturbing activities associated with fluid mineral leasing cannot be conducted on the surface of the land. Access to fluid mineral deposits would require horizontal drilling from outside the boundaries of the NSO area.

Nonenergy leasable minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. Nonenergy minerals include resources such as phosphate, sodium, potassium, and sulfur.

Non-habitat. Areas within the historical distribution of GRSG that are not occupied and are not capable of supporting GRSG or necessary habitats to support GRSG, and do not have the potential to provide habitat in the foreseeable future (< 100 years). GRSG may occasionally use these areas (e.g., migration), but these areas do not provide the necessary resources to support GRSG seasonally year-round.

Non-routine maintenance. Activities include realigning, upgrading, rebuilding, recontouring, or replacing a segment of or an entire powerline facility (e.g., change to higher voltage, changing from wood to metal poles, significantly increasing the pole height, adding additional lines, or change from above ground to buried). When non-routine activities are proposed, the BLM requires the holder to receive prior written approval. In certain circumstances, after further review and approval by the Authorized Officer, non-routine activities may be handled under established approaches as defined in the approved operation and maintenance plan or agreement. In some cases, an amendment to the authorization may be needed, in which case the BLM should ensure the holder submits an application to amend the authorization on Form SF-299. BLM approval must comply with the National Environmental Policy Act (NEPA) and other applicable law, which may require additional environmental analysis and studies or surveys.

Potential habitat. An area that is currently unoccupied by GRSG but has the potential for occupancy in the foreseeable future (< 100 years)**.** These areas are capable of supporting GRSG habitats based on soil types, climate, etc., and can include areas of habitat previously disturbed but that can be restored to GRSG habitats through either natural succession or human intervention.

Priority Habitat Management Areas (PHMA). Areas that have the highest value to maintaining sustainable GRSG populations and can include breeding, late brood-rearing, winter concentration areas, and migration or connectivity corridors. The BLM objective intent for these areas is to maintain and enhance habitat conditions that will support persistent and healthy GRSG populations through management to minimize habitat loss and degradation.

Remoteness. Represents how far a visitor is from a road or trail. The farther a visitor is from a road or trail, the more primitive the remoteness setting.

Renewable energy. Energy resources that constantly renew themselves or that are regarded as practically inexhaustible. These include solar, wind, geothermal, hydro, and biomass. Although particular geothermal formations can be depleted, the natural heat in the Earth is a virtually inexhaustible reserve of potential energy.

Required design features (RDFs). Means, measures, or practices intended to reduce or avoid adverse environmental impacts. A suite of features that would establish the minimum specifications for certain activities (i.e., water developments, mineral development, and fire and fuels management) and mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementation of best management practices. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level.

Resource Management Plan Designated Corridor. A corridor designated through a Resource Management Plan Record of Decision in compliance with Section 202 of the Federal Land Policy and Management Act (FLPMA).

Rights-of-way (ROW). Public lands authorized to be used or occupied for specific purposes pursuant to a right-of-way grant, which are in the public interest and which require ROWs over, on, under, or through such lands. ROWs may be issued for linear features (pipelines, powerlines, communication cable, roads, canals, access, etc.) or for sites (communication towers, airports, reservoirs, pumping stations, power generating facilities, etc.). For BLM GRSG Management ROWs are divided into major or minor depending on possible level of impact to GRSG (see below). For example, ROWs for buried linear features with limited to no surface disturbance are minor, but high voltage overhead transmission lines are major. Other projects may depend on the specific development plan and location, connected actions, and will require a determination by the BLM (refer to ROW management direction in Chapter 2, Table 2-2 and 2-3). For example, to use federal pore space for carbon sequestration would be minor, however, ROWs for associated and/or connected actions such as surface facilities to support carbon sequestration could be major depending on the scope of surface disturbance and infrastructure.

> **Major ROW**. Major ROW projects include transmission lines > 100kv and distribution pipelines > 24" diameter but may also include smaller electrical transmission and/or distribution lines and pipelines, as well as, other ROW projects that require large distances, density or footprints, with high levels of activity or surface disturbance. In addition, major ROW sites may contain multiple types of above and below ground features leading to a high density of infrastructure, or many tall structures.

> **Minor ROW**. Minor/Other ROW Projects include typical distribution, small transmission facilities, or low volume gathering features that create minimal surface disturbance. These types include but are not limited to local roads, pipelines, powerlines, and small communication sites.

Riparian Area. A form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas (See BLM Manual 1737). Included are ephemeral streams that have vegetation dependent upon free water in the soil. All other ephemeral streams are excluded.

Runoff. The total stream discharge of water, including both surface and subsurface flow, usually expressed in acre-feet of water yield.

Sagebrush Focal Area. Areas identified by the USFWS that represent recognized "strongholds" for Greater Sage-Grouse that have been noted and referenced as having the highest densities of Greater Sage-Grouse and other criteria important for the persistence of Greater Sage-Grouse.

Spatial relationships. How one object is located in space relative to another, important for spatial analysis of cultural resources.

Split estate. This is the circumstance where the surface of a particular parcel of land is owned by a different party than the minerals underlying the surface. Split estates may have any combination of surface/subsurface owners: federal/state; federal/private; state/private; or percentage ownerships. When referring to the split estate ownership on a particular parcel of land, it is generally necessary to describe the surface/subsurface ownership pattern of the parcel.

Saleable Minerals. Minerals that may be disposed of through sales and free use permits under the Materials Act of 1947, as amended. Included are common varieties of sand, stone, gravel, and clay (See also Mineral Materials).

Season of Use. A livestock grazing permit term and condition identifying the time during which livestock graze a given area to achieve management and resource condition objectives.

Special Use Authorization. A written permit, term permit, lease, or easement that authorizes use or occupancy of National Forest System lands and specifies the terms and conditions under which the use or occupancy may occur.

Stipulation (oil and gas). A provision that modifies standard oil and gas lease terms and conditions in order to protect other resource values or land uses and is attached to and made a part of individual lease requirements at the time the lease is issued. Once a mineral lease is issued, the applied stipulations cannot generally be changed or altered. Exceptions, modifications, or waivers may be granted under certain conditions outlined in the LUP. Typical lease stipulations include No Surface Occupancy (NSO), Timing Limitations (TL), and Controlled Surface Use (CSU), and Protection of Survey Corner and Boundary Line Markers. Lease stipulations are developed through the land use planning (RMP) process.

Surface Discharge. The release of produced water onto the unconfined land surface or into an existing drainage system.

Surface Disturbing Activities. An action that alters the vegetation, surface/near surface soil resources, and/or surface geologic features, beyond natural site conditions and on a scale that affects other Public Land values. Examples of surface disturbing activities may include: operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; and the conduct of several types of vegetation treatments (e.g., prescribed fire, etc.). Surface disturbing activities may be either authorized or prohibited (WY IB-2007-029).

Surface Management Agency (SMA). Depicts surface estate Federal land for the United States and classifies this land by its active Federal surface managing agency.

Timing limitation (TL). The TL stipulation, a moderate constraint, is applicable to fluid mineral leasing, all activities associated with fluid mineral leasing (e.g., truck-mounted drilling and geophysical exploration equipment off designated routes, construction of wells and/or pads), and other surface-disturbing activities (i.e., those not related to fluid mineral leasing). Areas identified for TL are closed to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified time frames. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, completions, and other operations considered to be intensive in nature are not allowed. Intensive maintenance, such as workovers on wells, is not permitted. TLs can overlap spatially with NSO and CSU, as well as with areas that have no other restrictions.

Traditional cultural property (TCP). A property that is eligible for inclusion in the National Register of Historic Places (NRHP) based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community.

Transmission line. A set of electrical current conductors, insulators, supporting structures, and associated equipment used to move large quantities of power at high voltage, usually over long distances (e.g., between a power plant and the communities that it serves).

Transmission corridor. An electric or pipeline transmission corridor is a route approved on public lands, in a BLM or other federal agency land use plan, as a location that may be suitable for the siting of electric or pipeline transmission systems.

Undisturbed habitats. Areas that are not presently directly or indirectly impacted by anthropogenic development.

Utility corridor. Tract of land varying in width forming passageway through which various commodities such as oil, gas, and electricity are transported.

Utility-scale solar. Solar projects with nameplate capacity (theoretical output registered with authorities) of 5 megawatt (MW) or higher that deliver electricity to the electricity transmission grid.

Utility-scale wind. The U.S. Department of Energy defines utility-scale wind projects as land-based and offshore projects larger than 1 megawatt (MW) (Wind Energy Technologies Office, WINDExchange, Office of Energy Efficiency & Renewable Energy, U.S. Department of Energy).

Valid existing rights. Documented, legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include but are not limited to fee title ownership, mineral rights, rights-of-way, easements, permits, licenses and adjudicated RS 2477 or RS 2339. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.

Vandalism. An action involving deliberate destruction or damage, in this case to cultural resources.

Watershed. The area of land, bounded by a divide, that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel (Dunne and Leopold, 1978), or to a lake, reservoir, or other body of water. Also called drainage basin or catchment

West Nile Virus. A virus that is found in temperate and tropical regions of the world and most commonly transmitted by mosquitoes. West Nile virus can cause flu-like symptoms in humans and can be lethal to birds, including Greater Sage-Grouse.

Wetlands. Those areas that are inundated by surface water or groundwater with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mudflats, and natural ponds.

Withdrawal. Withdrawals are used to transfer jurisdiction of management of public lands to other federal agencies.

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Appendix 7

References

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Appendix 7. References

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Appendix 8

US Fish and Wildlife Service Section 7 Concurrence Memo

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
334 Parsley Blvd.
Cheyenne, Wyoming 82007

In Reply Refer to:
FWS/R6/2025-0029235

Memorandum

To: Frank Quamen, Division Chief, Division of Wildlife, Aquatics, and Environmental Protection, Bureau of Land Management, Headquarters

TYLER ABBOTT Digitally signed by TYLER ABBOTT Date: 2025.10.22 08:39:25 -06'00'

From: Tyler Abbott, Field Supervisor, Wyoming Ecological Services Field Office

Subject: Informal Consultation on the Bureau of Land Management's Greater Sage-grouse Rangewide Planning Changes to Proposed Resource Management Plan Amendments for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming

This memorandum responds to the Bureau of Land Management's (BLM) September 10, 2025 email and attached amendment to the Biological Assessment (BA) issued by BLM on December 6, 2024 for the Greater Sage-Grouse Proposed Resource Management Plan Amendment (RMPA) and Final Environmental Impact Statement (FEIS). The BLM is requesting the Fish and Wildlife Service's (Service) concurrence that the proposed changes to management actions, as described in their September 2, 2025 Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document "may affect, but are not likely to adversely affect" federally-listed or proposed species, non-essential experimental populations, or designated or proposed critical habitats that occur on BLM-administered lands in portions of the states of California, Idaho, Montana, Nevada, North Dakota, South Dakota, Utah, and Wyoming (see Species and Critical Habitat List, Attachment A).

At a programmatic level, BLM evaluated the impacts of the proposed changes in management direction to be applied for the enhancement of Greater Sage-grouse (GRSG) conservation in portions of the aforementioned states, on listed species and their critical habitats that are known to, or could, occur within BLM-administered lands. The Service provides this response pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended.

Previous Greater sage-grouse Resource Plan Amendment Section 7(a)(2) Consultations

On January 8, 2025, the Service completed an informal consultation on the BLM's GRSG Proposed RMPA and FEIS. This consultation applies only to the states of Colorado and Oregon, as those states issued final Records of Decision (ROD) on January 15, 2025, and no further changes to management actions are planned in the near term. The remaining RODs for Idaho,

Montana/Dakotas, Nevada/California, Utah, and Wyoming were not finalized, and are proposed to include the changes described in the BLM's September 2, 2025 Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document. These proposed changes to management actions are the subject of the current consultation.

In 2015, BLM signed RODs for the Rocky Mountain and Great Basin regions Approved RMPAs addressing conservation measures for the GRSG and its habitat. In general, land use planning efforts such as these are best described as a strategy for completing site-specific actions; the strategy itself has no effect on listed species or critical habitats that can be meaningfully evaluated. The Service subsequently consulted on implementation of these RMPAs on a state-by-state basis, and concurred with BLM's determinations for the states of California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, and Wyoming. Due to potential conflicts between habitat management objectives for GRSG and those for the Utah prairie dog (UPD; *Cynomys parvidens*), for the state of Utah, the Service determined that the proposed action may affect, and was likely to adversely affect, the UPD. Formal consultation was completed, within which the Service provided conservation measures (Attachment B) to be implemented in instances where UPD and GRSG habitat management goals were in conflict. These conservation measures remain in place for the proposed 2025 Utah ROD.

Description of the Action

The BLM worked with state wildlife agencies to adjust habitat management area alignments from the 2015 RMPAs based on new scientific information and documentation of GRSG use within the 10 western states included in the Greater Sage-Grouse Proposed RMPA and FEIS. Habitat management areas are characterized as Priority Habitat Management Area (PHMA) or General Habitat Management Area (GHMA), with PHMA having a higher protected status. Potential impacts to listed species and critical habitats were analyzed within the revised PHMA and GHMA boundaries, with consultation specifically requested by BLM on the following proposed management direction changes:

- Adjustments to habitat management areas, including a subset of PHMA with suggestions for limited exceptions for fluid energy development to provide additional conservation to GRSG habitats.
- Managing livestock grazing to meet Land Health Standards vs. strict GRSG habitat objectives.
- Where appropriate, directing wild horse gathers inside of PHMA.
- Identifying PHMA as exclusion for renewable energy development.
- Directing any new rights of way (ROW) outside of PHMA.
- Improving habitat condition to reduce the risk of GRSG predation.
- Implementing a multi-scale assessment of GRSG vs. managing to specific habitat objectives.
- Changing the scale for determining disturbance caps.
- Emphasizing the mitigation hierarchy and, if needed, ensuring consistency with State requirements for compensatory mitigation.

- Adjusting how adaptive management is calculated, both in technique and scale to allow for more biologically meaningful assessments.

In addition to (and in some instances, in lieu of) the management direction changes listed above and analyzed in the Service's January 8, 2025 informal consultation, the BLM requests consultation on the following September 2, 2025 proposed changes to management actions:

- Elimination of the PHMA with limited exceptions subset of the PHMA habitat allocation.
- Updating GHMA and PHMA boundaries in Utah.
- Changing the nesting habitat benchmark in Idaho and California/Nevada from a quantitative standard to a qualitative standard to account for habitat variability across the states.
- Changing the allocation for major rights of way in GHMA in Nevada from avoidance to open.
- Further adjustments to how adaptive management is calculated, both in technique and scale to allow for more biologically meaningful assessments.

These changes are to management directions only and inform how future on-the-ground actions will be framed; there are no on-the-ground actions directly implemented or authorized by these changes. As noted in the original BA and its amendment, any future project that implements these changed management directions at the individual Resource Management Plan (RMP) level will require site-specific Section 7(a)(2) consultation for any potentially affected species and/or designated critical habitats.

Conservation Measures

As noted above, the 2015 RMPA consultations resulted in the development of conservation measures (Attachment B) for the UPD in Utah to address potential conflicts between GRSG and UPD management. The 2025 RMPA will not change two of the three sets of management directions—each associated with specific project types—that prompted the need for the formal consultation in 2015. The third set of 2015 management directions addressed rights-of-way (ROW) management; the 2025 proposal will provide additional protections for GRSG and sagebrush habitats in ROWs by changing most of the areas of overlap (PHMA) from *avoidance* for new ROWs, to *exclusion*, which may reduce the threat of habitat modification for both UPD and GRSG. In the 2025 RMPA, BLM is committing to comply with the conservation measures in full and will conduct site-specific Section 7(a)(2) consultations for actions that may affect UPD. The BLM will continue to implement other measures to reduce impact to UPD from their key threats.

Conclusion

The BLM's programmatic action implements a program designed to enhance GRSG conservation through the amendment of existing RMPs in 8 states by implementing changes in management direction for 10 different allocative directions. Prior to the implementation of changes in management direction at the RMP level, BLM field offices will use the Service's Information for Planning and Consultation website (https://ipac.ecosphere.fws.gov/) to get the

most up-to-date species and critical habitat list for their project area. If BLM makes a "may affect" determination for listed species or critical habitats, BLM will initiate consultation with the Service. Consultation will include a site-specific analysis of potential effects to listed species or critical habitat from proposed actions associated with changes in management direction. During local level consultations, the BLM will be able to determine more specifically which species might be impacted by the proposed changes in management direction, the nature and extent of potential impacts, and if additional conservation measures are needed to reduce potential adverse effects to these species. Additionally, BLM does not need to reinitiate at the programmatic level for newly proposed or listed species or critical habitat, as that will be done at the local (RMP) level.

Based on BLM's commitment to implement conservation measures identified in their original BA and its amendment, and the requirement for site-specific consultations prior to the implementation of any management direction changes, the Service concurs that the proposed action is not likely to adversely affect threatened or endangered species, proposed species, non-essential experimental populations or designated or proposed critical habitats under the jurisdiction of the Service. If any subsequent action falls outside of the proposed changes in management direction to benefit GRSG conservation, BLM should evaluate the potential need to initiate formal consultation on that particular action, as it would fall outside the scope of this programmatic consultation.

This concludes informal consultation on BLM's Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document. In accordance with 50 CFR § 402.16, reinitiation of consultation is required and shall be requested by BLM or the Service where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) if new information reveals effects of the action that may affect listed species or critical habitat in a manner to an extent not previously considered; or (2) if the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this concurrence letter.

If you have any questions or require additional information, please contact Dawn Davis (dawn_davis@fws.gov) or John Hughes (john_hughes@fws.gov).

Attachment A: Species and Critical Habitat List
Attachment B: Utah prairie dog conservation measures

Attachment A. Listed Species and Critical Habitat Analyzed for the Bureau of Land Management's Greater Sage-grouse Rangewide Planning Changes to Proposed RMPA for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming document.

Species	Status[1]	Critical Habitat?	Determination
Mammals			
Black-footed ferret (*Mustela nigripes*)	E, EXPN	No	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Canada lynx (*Lynx canadensis*)	T	Yes	Not likely to adversely affect
Gray wolf (*Canis lupus*)	E, EXPN	Not in action area	Not likely to adversely affect (E) Non-jeopardy (EXPN)
Grizzly bear (*Ursus arctos horribilis*)	T, EXPN	Yes	Not likely to adversely affect (T) Not likely to jeopardize (EXPN)
North American wolverine (*Gulo gulo luscus*)	T	No	Not likely to adversely affect
Northern long-eared bat (*Myotis septentrionalis*)	E	No	Not likely to adversely affect
Preble's meadow jumping mouse (*Zapus hudsonius prebei*)	T	Yes	Not likely to adversely affect
Tricolored bat (*Perimyotis subflavus*)	P, E	No	Not likely to adversely affect
Utah prairie dog (*Cynomys parvidens*)	T	No	Not likely to adversely affect
Birds			
California condor (*Gymnogyps californianus*)	E, EXPN	Yes	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Mexican spotted owl (*Strix occidentalis lucida*)	T	No	Not likely to adversely affect
Piping plover (*Charadrius melodus*)	T	Yes	Not likely to adversely affect
Rufa red knot (*Calidris canutus rufa*)	T	Yes	Not likely to adversely affect
Southwestern willow flycatcher (*Empidonax trailii extimus*)	E	Yes	Not likely to adversely affect
Whooping crane (*Grus americanus*)	E, EXPN	Yes	Not likely to adversely affect (E) Not likely to jeopardize (EXPN)
Western yellow-billed cuckoo (Western DPS; *Coccyzus americanus*)	T	Yes	Not likely to adversely affect
Reptiles			
Northwestern pond turtle (*Actinemys marmorata*)	P, T	No	Not likely to adversely affect
Insects			
Carson wandering skipper (*Pseudocopaeodese unus obscurus*)	T	No	Not likely to adversely affect
Regal fritillary (*Speyeria idalia*)	P, T	No	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Silverspot (*Speyeria nokomis nokomis*)	T	No	Not likely to adversely affect
Mollusks/Snails			
Banbury Springs limpet (*Idaholanx festi*)	E	No	Not likely to adversely affect
Bruneau hot springsnail (*Pyrgulopsis bruneauensis*)	E	No	Not likely to adversely affect
Snake River Physa snail (*Physa natricina*)	E	No	Not likely to adversely affect
Amphibians			
Dixie Valley toad (*Anaxyrus williamsi*)	E	Yes	Not likely to adversely affect
Wyoming toad (*Bufo baxteri*)	E	No	Not likely to adversely affect
Fish			
Big springs spinedace (*Lepidomena milliispinis*)	T	Yes	Not likely to adversely affect
Bonytail (*Gila elegans*)	E	Yes	Not likely to adversely affect
Bull trout (*Salvelinus confluentus*)	T	Yes	Not likely to adversely affect
Chinook salmon (Snake River spring/summer run; *Onorhynchus tshawytsha*)	T	Yes	Not likely to adversely affect
Chinook salmon (Snake River fall run; *Onorhynchus tshawytsha*)	T	Yes	Not likely to adversely affect
Clover Valley speckled dace (*Rhinichthyus osculus oligoporus*)	E	No	Not likely to adversely affect
Colorado pikeminnow (*Ptychocheilus lucius*)	E	Yes	Not likely to adversely affect
Cui-ui (*Chasmistes cujus*)	E	No	Not likely to adversely affect
Desert dace (*Eremichthys across*)	T	Yes	Not likely to adversely affect
Greenback cutthroat trout (*Onchorhynchus clarki ssp. Stomais*)	T	No	Not likely to adversely affect
Hiko White River springfish (*Crenichthys baileyi grandis*)	E	Yes	Not likely to adversely affect
Humpback chub (*Gila cypha*)	T	Yes	Not likely to adversely affect
Hutton tui chub (*Gila bicolor*)	E	No	Not likely to adversely affect
Independence Valley speckled dace (*Rhinichtys osculus*)	E	No	Not likely to adversely affect
Kendall warm springs dace (*Rhinichyts osculus thermalis*)	E	No	Not likely to adversely affect
Lahontan cutthroat trout (*Onorhynchochos clarkia henshawi*)	T	No	Not likely to adversely affect
Lost River sucker (*Deltistes luxatus*)	E	Yes	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Pahranagat roundtail chub (*Gila robusta jordani*)	E	No	Not likely to adversely affect
Pahrump poolfish (*Empetrichthys latos*)	E	No	Not likely to adversely affect
Pallid sturgeon (*Scaphirhynchus albus*)	E	No	Not likely to adversely affect
Railroad Valley springfish (*Crenichthys nevada*)	T	Yes	Not likely to adversely affect
Razorback sucker (*Xyrauchen texanus*)	E	Yes	Not likely to adversely affect
Shortnose sucker (*Chasmistes breviirostris*)	E	Yes	Not likely to adversely affect
Warner sucker (*Catostomus warnerensis*)	T	Yes	Not likely to adversely affect
White River spinedace (*Lepidomena albivalis*)	E	Yes	Not likely to adversely affect
Whiteriver springfish (*Crenichtys baileyi baileyi*)	E	Yes	Not likely to adversely affect
Plants			
Autumn buttercup (*Ranunculus aestivalis acriformis*)	E	No	Not likely to adversely affect
Barneby reed-mustard (*Schoenocrambe barnebyi*)	E	No	Not likely to adversely affect
Blowout penstemon (*Penstemon haydenii*)	E	No	Not likely to adversely affect
Clay phacelia (*Phacelia argillacea*)	E	No	Not likely to adversely affect
Clay reed-mustard (*Schoenocrambe argillacea*)	T	No	Not likely to adversely affect
Desert yellowhead (*Yermo xanthocephalus*)	T	Yes	Not likely to adversely affect
Heliotrope milk-vetch (*Astragalus montii*)	T	Yes	Not likely to adversely affect
Howell's spectacular thelypody (*Thelypodium howelli ssp. spectabillis*)	T	No	Not likely to adversely affect
Jones cycladenia (*Cycladenia humilis var. jonesii*)	T	No	Not likely to adversely affect
Kodachrome bladderpod (*Lesquerella tumulosa*)	E	No	Not likely to adversely affect
Last chance townsendia (*Townsendia aprica*)	T	No	Not likely to adversely affect
San Rafael cactus (*Pediocactusdes depainii*)	E	No	Not likely to adversely affect
Shrubby reed-mustard (*Schoenocrambe suffrutescens*)	E	Yes	Not likely to adversely affect
Slender Orcutt grass (*Orcuttia tenuis*)	T	Yes	Not likely to adversely affect
Slickspot peppergrass (*Lepidium papilliferum*)	T	Yes	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Species	Status[1]	Critical Habitat?	Determination
Uinta Basin hookless cactus (*Sclerocactus wetlandicus*)	T	No	Not likely to adversely affect
Ute ladies'-tresses (*Spiranthes diluvialis*)	T	No	Not likely to adversely affect
Webber ivesia (*Ivesia webberi*)	T	Yes	Not likely to adversely affect
Western prairie fringed orchid (*Platanthera praeclara*)	T	No	Not likely to adversely affect
Wright fishhook cactus (*Sclerocactus wrightiae*)	E	No	Not likely to adversely affect
Whitebark pine (*Pinus albicaulis*)	T	No	Not likely to adversely affect

[1] E – Endangered, T – Threatened, P – Proposed, EXPN – Experimental, Non-essential

Attachment B. Utah Prairie Dog (*Cynomys parvidens*) Conservation Measures to be Implemented on BLM Lands in Conjunction with the 2025 GRSG RMPA.

In their 2015 Biological Assessment (BA; BLM 2015), the BLM committed to implementing the following conservation measures when planning and implementing management actions in areas where greater sage-grouse and Utah prairie dog habitat overlap. These conservation measures will continue to be implemented under the 2025 GRSG RMPA:

- Under the authority of BLM laws, regulations, and policies, where Utah prairie dog habitat overlaps with greater sage-grouse habitats, it is the intent of these land use plan amendments to co-manage for the benefit of both species. For example, when applying various management actions and objectives that are applicable specifically to greater sage-grouse but could affect Utah prairie dog habitat, landscapes would be managed for both species. Examples of some of these BLM management actions and objectives are included in over-arching management in GRSG habitat (e.g., Objective GRSG-3, MA-GRSG-4), vegetation management (e.g., Objective VEG-1, MA-VEG-1), and fire management (e.g., MA-FIRE-3, MA-FIRE-4).

- The BLM commits to include co-management language that will help guide planning and implementing management actions in areas where greater sage-grouse and Utah prairie dog habitat overlaps. This co-management language is included in the following Management Actions and Objectives in the final BA:

    - Objective GRSG-2
    - Objective GRSG-4
    - MA-GRSG-3
    - MA-GRSG-5
    - MA-VEG-4

    Co-management language will be included in the following Management Actions and Objectives in the BLM's Record of Decision:

    - Objective GRSG-3
    - MA-GRSG-4
    - MA-GRSG-6
    - Objective VEG-1
    - MA-VEG-1
    - MA-FIRE-3
    - MA-FIRE-4

- There is a suite of project-level conservation measures that will minimize impacts to Utah prairie dogs that are already in place in existing biological assessments, plans, policies, and regulations (see Attachment E *in* the BA). The following conservation measure from the BA for this proposed action describes this as follows:

- The original biological assessment impacts analysis included conservation measures from various existing land use plans and conservation measures from existing, site-specific projects, as well as their associated Section 7 consultations for Utah prairie dog. The conservation measures from the existing land use plans and land use plan Section 7 consultations have been more clearly identified in Attachment E of the BA. The conservation measures from the existing site-specific projects were illustrative of the types of site-specific conservation measures that may be used during implementation of Utah prairie dog conservation actions.

Literature Cited

Bureau of Land Management. 2015. Biological Assessment for the Utah Greater Sage-Grouse Land Use Plan Amendment and Final Environmental Impact Statement. May 20, 2015. 186 pp.

Appendix 9

BLM Adaptive Management Process

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Appendix 9. BLM Adaptive Management Process

The BLM will implement GRSG adaptive management in coordination with existing or future state-level interagency adaptive management teams and use the best available scientific information, including GRSG population status as determined by State GRSG authorities. Composed of knowledgeable BLM and State GRSG authorities and working groups, interagency adaptive management teams will provide GRSG habitat management information to the BLM authorized officers. The BLM will work with the appropriate agencies to inform and implement the most recent State adaptive management processes, consistent with the framework outlined in this appendix.[1]

Key elements of the GRSG adaptive management process set forth herein include (1) monitoring habitat conditions and population status (e.g., abundance and trends) analysis units, (2) establishing and routinely assessing thresholds for habitat conditions and population status indicating unanticipated GRSG habitat impacts, (3) conducting causal factor analyses (CFA) of thresholds that have been met, and (4) employing management decisions and actions in response to thresholds and CFAs.

9.1 Analysis Units

To accurately inform adaptive management, the status of GRSG habitat and populations will be monitored and thresholds assessed at a scientifically appropriate scale and within comparable spatial analysis units. The BLM will specify the spatial analysis unit, in coordination with State GRSG authorities, applied when implementing adaptive management. Some threshold assessments, CFAs, and adaptive management responses may need to extend beyond individual spatial analysis units to address large-scale unanticipated negative impacts to GRSG habitat.

9.2 Habitat Thresholds

Habitat Threshold Activation – The BLM's adaptive management process specifies habitat thresholds for negative changes to GRSG habitat condition. The BLM will routinely assess the following habitat thresholds, which may be revised by the BLM as warranted through appropriate additional decision-making with newly available scientific information, and will document data and rationale for activated thresholds:

1. A soft habitat threshold will be activated when more than 5% of the suitable habitat (as defined as areas capable of supporting sagebrush) of Priority Habitat Management Areas (PHMA) spatial analysis unit is lost during a given year (including losses to wildfire). Percent sagebrush loss will be calculated only on PHMA portions of a spatial analysis unit that may also contain other HMA designations (e.g., GHMA). Baselines for calculating sagebrush loss will be specified by the sagebrush base layer delineated with the most recent LandFire data (detailed in Appendix 3) available at publication of the Approved RMPA and ROD.
2. A hard habitat threshold will be activated when suitable habitat, as defined above, in PHMA within a spatial analysis unit decreases below 65% (Aldridge et al., 2008; Connelly et al., 2000).

[1] The Federal Land Policy and Management Act (FLPMA) requires the BLM, to "resolv[e], to the extent practical, inconsistencies between Federal and non-Federal Government plans," and achieve consistency with State and local plans to the maximum extent that the BLM finds to be consistent with the laws governing public lands. 43 USC 1712(c)(9). See also 43 CFR 1610.3-1.

3. A hard habitat threshold will also be activated when a soft habitat threshold occurs as calculated from baseline in 4 consecutive years (i.e., >5% decline in each of 4 consecutive years).
4. All habitat thresholds activated will be verified through ground-truthing as described in the "Causal Factor Analysis (CFA)" section below.

Habitat Threshold Deactivation – Habitat threshold deactivation will be determined by the BLM in coordination with State GRSG authorities, and state-level interagency adaptive management teams where occurring. Data and rationale for deactivating a threshold will be documented. Deactivating habitat thresholds will correspond to the following criteria:

1. Soft and hard habitat thresholds can be deactivated if the quantity of sagebrush vegetation communities within the affected spatial analysis unit recover to sagebrush conditions and/or habitat function existing prior to a habitat threshold being activated.
2. If a spatial analysis unit cannot be restored to original sagebrush conditions and/or habitat function due to ecological or disturbance limitations (e.g., intense wildfire-killed soil microfauna, dense anthropogenic activities, etc.), restoration and/or habitat enhancement in adjacent spatial analysis units can be considered to increase GRSG abundance in those areas. In these situations, habitat threshold deactivation occurs when regional GRSG abundance recovers as determined by State GRSG authorities to levels present prior to the threshold being activated.
3. If enhancing habitats in adjacent spatial analysis units does not deactivate a threshold, further assessment may be necessary to determine if the area in which the habitat threshold occurred should still be considered GRSG habitat.

9.3 POPULATION THRESHOLDS

Population Threshold Activation – Although BLM does not manage GRSG, GRSG population status can provide valuable information about habitat conditions on BLM-administered lands. In addition to habitat thresholds, the BLM's adaptive management process specifies population thresholds as indicators of potential habitat condition changes and unanticipated negative impacts to GRSG. States lead GRSG population data collection and determination of population status, often in coordination with state-level interagency adaptive management teams. Therefore, threshold activation will be determined in coordination among BLM, State GRSG authorities, and state-level interagency adaptive management teams where occurring. In addition, State GRSG authorities should alert the BLM any time an internal assessment identifies population status concerns warranting activation of population thresholds. The BLM will document data and rationale for activating population thresholds, including population status input and recommendations from State GRSG authorities.

Population Thresholds – The BLM will review population trend assessments provided by the States, annual Hierarchical Population Monitoring Framework (HPMF) results (when available, Coates et al. 2021 and subsequent updates or revisions), and other available scientific information to inform potential habitat concerns in PHMA. State GRSG authorities receive HPMF results in advance of public releases. Therefore, State GRSG authorities can provide the BLM with early alerts of both soft and hard population thresholds that may need a CFA (note: the BLM does not receive lek specific information from the HPMF).

To the extent the HPMF's Targeted Annual Warning System (TAWS) is consistent with State adaptive management processes and the best available science, and therefore utilized by the BLM, activation of the HPMF thresholds correspond to the following definitions:

1. Activation of a soft population threshold is equivalent to a TAWS "watch," which is defined as 2 consecutive years of population decline within a neighborhood cluster that is either different or more rapid than the associated climate cluster.
2. Activation of a hard population threshold is equivalent to a TAWS "warning," which is defined as 2 out of 3 (fast) or 3 out of 4 (slow) consecutive years of population decline within a neighborhood cluster that is either different or more rapid than the associated climate cluster.

HPMF Population Threshold Deactivation – Where applied, HPMF population threshold deactivation will be determined by the BLM in coordination with State GRSG authorities, and state-level interagency adaptive management teams where occurring. The BLM will document data and rationale for deactivating a population threshold. To the extent TAWS is consistent with State adaptive management processes and the best available science, and therefore utilized by the BLM, deactivating HPMF population thresholds will correspond to the following criteria:

1. The affected population's trend is no longer a "watch" or "warning" within a neighborhood cluster and realigns with the climate cluster's trend for 3 consecutive years; or
2. The affected population's abundance or growth rate are sufficient for recovery as determined by and with concurrence of State GRSG authorities; or
3. The BLM and State GRSG authorities determine threshold results were in error.

Population Threshold Verification – The BLM and State GRSG authorities will jointly verify each activated population threshold, preferably within 60 days, to assess if habitat factors may be influencing the suspected population threshold. If BLM and State GRSG authorities agree a threshold was activated in error, the BLM will document information substantiating the error and threshold deactivation as may be warranted. In the event of a disagreement, BLM and State GRSG authorities will coordinate to resolve the disagreement by further assessing and documenting potential threshold analysis errors. If a disagreement persists, the appropriate BLM State Director will collaborate with BLM State and National GRSG coordinators and local BLM field biologist, as needed, to evaluate threshold results and determine if a CFA is prudent. The BLM State Director will advise the State GRSG authorities of BLM's threshold verification conclusion.

9.4 CAUSAL FACTOR ANALYSIS (CFAS)

CFA Teams – CFA teams will identify factors causing thresholds to be activated and recommend adaptive management responses to deactivate thresholds. CFA team composition should minimally include the local BLM biologist, BLM State Sage-grouse Lead, and at least one representative from the State GRSG authorities. Additional subject matter experts, stakeholders with local knowledge, and other affected parties may be included on CFA teams as appropriate for site-specific analyses or as consistent with existing CFA team structures.

Formal CFA – The BLM, in coordination with the CFA team, will perform a CFA and prepare a report for each activated and verified habitat and population threshold. Formal CFAs will be performed for activated thresholds with one or more potential causal factors that are not obvious (in contrast to the Rapid Assessment CFA described below). CFAs will identify factors causing thresholds to be activated and recommend adaptive management responses to deactivate thresholds. Substantive disagreements about

causal factors will be noted in the CFA report along with the basis of the disagreements. CFAs and reports will be completed within 12 months from the threshold being activated. BLM will prepare a CFA report even if no causal factors are identified. Upon completion, CFA reports will be submitted to the appropriate local BLM manager, BLM State Sage-grouse Lead, BLM National GRSG Coordinator, State GRSG authorities, and CFA team. CFA reports will include, but not be limited to, the following information about the activated threshold and affected spatial analysis unit(s):

1. Descriptions of existing land uses.
2. Landownership patterns.
3. GRSG population trends.
4. Habitat conditions and trends.
5. Factor(s) causing the habitat and/or population declines and threshold activation.
6. Recommended management actions to address causal factors.
7. Data and expertise used to reach CFA conclusions.

Rapid Assessment CFA – A rapid assessment CFA can be performed instead of a formal CFA for activated thresholds with obvious causal factors (e.g., large wildfire or other discrete events). Rapid assessments may be conducted by the BLM or appropriate State GRSG authorities, or both, but results should be confirmed by all parties. Causal factors identified during a rapid assessment will be documented and reported to the appropriate local BLM manager, BLM State Sage-grouse Lead, BLM National GRSG Coordinator, State GRSG authorities, and CFA team. If a rapid assessment identifies no obvious causal factor, a formal CFA will be completed within 12 months of the threshold being activated.

9.5 PHMA Adaptive Management Responses

Threshold Responses – The BLM will implement adaptive management responses to address factors causing habitat or population threshold activation as specified in CFA reports and rapid assessment documentation. In accordance with applicable law and prior existing valid rights, the BLM may modify authorizations of existing activities and defer authorization of proposed new activities to avoid, minimize, or otherwise mitigate GRSG impacts on BLM-administered lands from causal factors. Through project-level analysis conducted under the National Environmental Policy Act (NEPA), the BLM will evaluate if a proposed new activity could contribute to an activated threshold or cause a future threshold activation. Implementing habitat improvement projects should also be considered if likely to reverse thresholds. The BLM will coordinate adaptive management responses with State GRSG authorities and state-level interagency adaptive management teams where occurring.

Spatial Scale and Monitoring – The BLM will target adaptive management responses at the spatial scale and within the spatial analysis unit at which a threshold is activated. However, a CFA team may recommend expanding the spatial extent of adaptive management analyses and recommended responses beyond individually activated spatial analysis units to address large-scale unanticipated negative impacts to GRSG habitat. Monitoring of the affected habitat or population (or both if appropriate) will be necessary to assess the efficacy of adaptive management responses for deactivating thresholds.

Non-BLM administered lands – CFAs and corresponding adaptive management responses should consider if threshold activation in PHMA is due to actions on non-BLM administered lands. If a threshold is activated from actions on adjacent non-BLM administered lands, the BLM can consider authorizing proposed new activities that will not negatively impact GRSG habitat or populations on BLM-administered lands or

contribute to indirect or cumulative impacts. The BLM may also consider additional adaptive management responses as needed to prevent further GRSG habitat impacts on BLM-administered lands. The BLM will document adaptive management determinations regarding non-BLM administered lands to address a threshold that has been activated due to activities that occurred on non-BLM-administered lands.

Thresholds – The BLM can consider authorizing proposed new activities during a CFA if the activities will cause no GRSG mortality or direct loss or degradation of occupied GRSG habitat. After completing the CFA, the BLM can consider activity authorizations and reauthorizations if similar activities were neither causal factors nor contributing factors of the activated threshold. Project-level NEPA will evaluate if authorizing a proposed new activity could cause a threshold to be sustained or reactivated.

Threshold Modification – If supported by local data, a CFA team can review and recommend modifying the activated threshold level, and corresponding adaptive management responses, from (1) soft-to-hard or (2) hard-to-soft. Threshold modifications must be supported by data and detailed in a written report that is approved by the BLM authorized officer in consultation with State GRSG authorities and local CFA team.

Exceptions to Threshold Responses – The BLM will coordinate with permittees and project proponents to reduce potential GRSG impacts from the following exceptions to adaptive management responses for activated thresholds:

1. Renewal of existing authorized activities that require an authorization if:
   a. The activity is scheduled within 60 days of when a threshold is identified and activated, and
   b. The permittee or project proponent can demonstrate significant negative economic impacts (e.g., documented loss of income equivalent to the income potential of the activity), and
   c. The renewal can only be considered if it does not result in known negative impacts to GRSG habitat or populations.
2. Activities essential for human health and safety in a current or likely catastrophic event (e.g., repair of dams, emergency vehicle access, emergency utility repairs). Note: routine maintenance and operations of electric utility ROWs may continue as outlined in 43 CFR 2801 and authorized ROW grants.
3. Emergency Stabilization and Rehabilitation activities for post-wildfire restoration.
4. A livestock grazing permit or lease to extend the current livestock grazing practice may be renewed, but only for the period/duration needed to complete the CFA. If livestock grazing is not determined as a causal factor to an activated threshold, the subsequent livestock grazing permit or lease renewal can proceed normally. If livestock grazing is identified as a causal factor to an activated threshold, the terms and conditions of the subsequent livestock grazing permit or lease will need to be examined through NEPA and potentially modified to reduce or eliminate negative habitat impacts.
5. Continuing the terms and conditions for livestock grazing when a permit or lease has expired or was terminated due to a livestock grazing preference transfer in accordance with Section 402(c)(2) of the Federal Land Policy and Management Act (FLPMA).

Inconclusive CFAs – If a CFA identifies no causal factor for an activated threshold, the BLM may consider additional project-level restrictions on existing or new activity authorizations within the spatial analysis unit of the activated threshold. The BLM will implement activity restrictions in coordination with permit holders and State GRSG authorities and in accordance with applicable law and prior existing valid rights. The BLM will document the biological rationale for restrictions. New authorizations must disclose that a threshold

has been activated and consider potential cumulative impacts on GRSG habitat and State-managed populations. In addition to activity restrictions, the BLM should implement habitat improvement projects to promote threshold deactivation. The BLM should monitor habitat conditions associated with inconclusive CFAs and document new information as a CFA report addendum or in annual adaptive management reports. CFAs not completed within 12 months will not be considered inconclusive and should be prioritized for completion.

Adaptive Management Response Removal – After corresponding thresholds are deactivated, the BLM will remove activity management actions, adjustments, or stipulations implemented as adaptive management responses on authorized activities, coordinated with permittees. BLM will also consider authorizing new proposed activities within associated spatial analysis units after thresholds are deactivated.

9.6 HABITAT THRESHOLDS DUE TO WILDFIRE

If wildfire causes habitat threshold activation, the BLM will coordinate with State GRSG authorities and assess actual wildfire impacts to GRSG habitat within the wildfire perimeter, including the extent of lost habitat, burn severity, and sagebrush mortality, except as defined in the Exceptions to Threshold Response above. The BLM will perform post-wildfire GRSG habitat assessments, which can include an initial rapid assessment CFA, in addition to a BLM Emergency Stabilization and Rehabilitation review that might also occur. If the GRSG habitat assessment concludes that wildfire severity permanently precludes habitat restoration, the BLM may perform additional assessments to determine if the wildfire-affected area should not be considered GRSG habitat. Post-wildfire GRSG habitat assessments and associated determinations will be documented and reported to the BLM State Director, BLM State Office Sage-grouse Lead, National BLM GRSG Coordinator, and State GRSG authorities.

The BLM will complete post-wildfire GRSG habitat assessments before the next growing season following the fire. Until a post-wildfire GRSG habitat assessment is completed, the BLM will authorize no new activities that could cause more GRSG habitat loss or degradation within PHMA portions of the wildfire-affected spatial analysis unit(s) where the habitat threshold is activated. The threshold will be deactivated if the assessment concludes that wildfire did not reduce the availability of habitat services (i.e., food, cover, water, and connectivity) necessary to support pre-wildfire GRSG abundance. State GRSG authorities will determine pre-wildfire GRSG abundance and participate in the assessment of wildfire effects on GRSG abundance and habitat services. If pre-wildfire GRSG abundances are not supported, the BLM may defer authorizing new activities in accordance with applicable law and prior existing valid rights until the threshold is deactivated and the wildfire-affected area again supports pre-wildfire GRSG abundances. The BLM may consider authorizing new activities prior to threshold deactivation only if the activity will neither directly nor indirectly impact the wildfire-affected GRSG populations, as determined in coordination with State GRSG authorities.

Appendix 10

Summary of Public Comments on the Proposed Changes Between Proposed RMPA and ROD

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Appendix 10. Summary of Public Comments on the Proposed Changes Between Proposed RMPA and ROD

Consistent with 43 CFR 1610.2(f)(5) and 1610.5-1(b), significant changes to the proposed management direction in the Proposed Resource Management Plan (RMP) Amendment were published for public comment on September 2, 2025, for a 30-day comment period, which ended on October 3, 2025. This was a narrow comment period focused specifically on five significant changes to management direction from what was published in the Proposed RMP Amendment on November 15, 2024. These changes included:

- Substantive edits to the adaptive management language in the Proposed RMPAs for Idaho, Montana/Dakotas, Nevada/California, Utah, and Wyoming to better align with state policies and programs to manage sage-grouse populations.
- Removal of the designation for Priority Habitat Management Areas (PHMA) with limited exceptions as a distinct subset of PHMAs to improve consistency with state and local plans.
- Changing the seasonal habitat benchmark for perennial grass height during nesting/early brood rearing from a quantitative standard to a qualitative standard in the Nevada/California and Idaho Proposed RMPAs.
- Updating the habitat management area boundaries for the Utah Proposed RMPA to more closely align with the State of Utah Greater Sage-Grouse Conservation Plan (2019).
- Changing the allocation for major rights of way in general habitat management areas (GHMA) in the Nevada Proposed RMPA from avoidance to open to align more closely with how GHMA is managed in BLM California.

The BLM received approximately 170 unique, substantive comments on these changes, which are summarized below along with the BLM's responses. Utah changes are limited to the Adaptive Management and HMA boundary updates in the bulleted list above; however, comment summaries for the PHMA with limited exceptions were carried forward also; however, Utah did not have this designation so these changes are irrelevant for Utah. The comments pertinent to these changes are summarized below along with the BLM's responses.

10.1 Adaptive Management (General)

- **Comment Summary:** The BLM should update the RODs with language explaining how it will address inconsistencies between the adaptive management provisions in existing state plans and those described in the FEIS. The Proposed Changes document does not clarify how these inconsistencies will be resolved.

  Response: States have ownership over managing GRSG populations and therefore lead the collection of GRSG population monitoring data and determination of population status (e.g., increasing, decreasing, or stable). The States' population monitoring is important for informing effective GRSG habitat management on BLM-administered lands. The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the

Approved Amendment. Every state in the Task Force supports this management approach. Further, the BLM's adaptive management approach identifies the need for close coordination with states in implementing this framework, including the development of interagency teams to utilize best available science to coordinate with state authorities on analysis units, population status, thresholds, causal factors, and responses. During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands.

- **Comment Summary:** Commenters provided specific adaptive management recommendations in tracked-change format within their letters.

  Response: The BLM carefully considered the proposed edits to adaptive management language and adopted them as appropriate.

10.2 ADAPTIVE MANAGEMENT- HABITAT THRESHOLDS

- **Comment Summary:** The BLM should clarify how habitat thresholds will be deactivated and how habitat threshold activation due to wildfire is addressed.

  Response: Threshold deactivation is discussed in the adaptive management appendix, *Habitat Threshold Deactivation.* Habitat threshold activation due to wildfire is discussed in the adaptive management appendix, *Habitat Thresholds due to Wildfire*. During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address implementation of this framework.

- **Comment Summary:** The BLM should consider routine and non-routine operations for utility operators when identifying threshold responses, as RODs do not have utility operations exemptions. RODs should include specific language that explicitly permits routine ROW maintenance, including service road access, as part of valid existing rights, regardless of threshold response status.

  Response: The BLM clarified in the adaptive management appendix, *Exceptions to Threshold Responses,* that ROW operations and routine maintenance may be an exception to threshold responses and will follow the regulations at 43 CFR 2801 and the terms of the ROW authorization.

10.3 ADAPTIVE MANAGEMENT- CAUSAL FACTOR ANALYSIS

- **Comment Summary:** Causal Factor Analysis has been misused to restrict other development activities, such as grazing allotments, and the Proposed Changes document fails to address this issue. Causal Factor Analysis should place greater emphasis on natural causes of habitat degradation, including predation and large wildfires. Commenters proposed specific text revisions in tracked-change format within their letters. (See Letter 149 from Eureka County, NV, and Letter 191 from Humboldt County, NV.)

  Response: The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the Approved Amendment. The evaluation of causal factors includes consideration of how natural factors contribute to the degradation of sage-grouse habitat. As stated in the adaptive management appendix, *Causal Factor Analysis,* formal CFA reports will cover aspects such as habitat conditions, factors causing declines and threshold activation, and recommendations. In cases of large wildfires, a Rapid Assessment CFA can be prepared. Actions

taken to implement the CFA recommendations by the BLM will require NEPA. In the case of grazing allotment based actions, the BLM will not take a management action related to grazing unless it is determined that grazing is the causal factor of the threshold being met. Grazing allotment renewal is also established as one of the exceptions to threshold responses, and allotments may be renewed while a CFA is ongoing, which is clarified in the final adaptive management language. The evaluation of causal factors includes consideration of how natural factors contribute to the degradation of sage-grouse habitat. In addition, wildfire is further addressed in the adaptive management appendix, *Habitat Thresholds Due to Wildfire.*

- **Comment Summary:** When conducting Causal Factor Analysis, other sagebrush-obligate species, such as mule deer and pygmy rabbits, should also be considered as potential indicator species for sagebrush biomes.

  Response: The BLM will consider the best available information in completing a causal factor analysis. As stated in the adaptive management appendix, *Causal Factor Analysis,* the BLM will consider habitat conditions and trends, which may include all sagebrush-dependent species.

10.4 ADAPTIVE MANAGEMENT- TARGETED EARLY WARNING SYSTEM (TAWS) AND POPULATION THRESHOLDS

- **Comment Summary:** TAWS is an outdated system that is error-prone and fails to deliver adequate management outcomes. State agencies are better equipped to handle adaptive management and monitoring. The BLM should prioritize supporting state agencies and fostering greater collaboration between the BLM and state agencies.

  Response: TAWS is currently the best available science, developed in close coordination with all state agency biologists and the Western Association of Fish and Wildlife Agencies. The BLM will continue to evaluate the best available science when making management decisions for sage-grouse habitat. The BLM coordinated extensively with the Western Governors' Association Sage-grouse Task Force (WGA SGTF) to draft the adaptive management approach in the proposed changes document, which is adopted in the Approved Amendment. The revised Adaptive Management approach supports strong collaboration with state agencies and provides for verification of thresholds, see *Population Threshold Verification*.

- **Comment Summary:** Conversely, the BLM already employs adaptive management methods, including TAWS, which are informed by state agency data. However, the Proposed Changes document indicates that states may be granted authority to override BLM management actions, which would conflict with FLPMA.

  Response: The BLM is committed to close coordination with states in making management decisions for sage-grouse habitat and ensuring that information about sage-grouse populations is accurate. This does not mean that states may override the BLM's management actions on BLM-administered lands. The Adaptive Management Action states, "BLM will coordinate with State GRSG authorities regarding management decisions made in response to adaptive management thresholds and subsequent causal factor analyses and will make decisions for the management of BLM managed surface lands and mineral estate." This is further explained in the Adaptive Management Responses Section, specifically it explains the BLM will implement adaptive management responses.

- **Comment Summary:** The BLM should clarify how population thresholds are addressed.

  Response: The adaptive management appendix addresses population thresholds.

10.5 ADAPTIVE MANAGEMENT- STATE POLICIES AND PROGRAMS

- **Comment Summary:** The BLM should adopt the Nevada adaptive management process for the Nevada/California RMP amendment. The BLM should adopt state specific policies used by the State of Nevada, including input from Sagebrush Ecosystem Technical Team (SETT), and following the Nevada's Conservation Credit System (CCS). Nevada commenters expressed concern that the BLM had adopted Wyoming's Adaptive Management Approach, while subjecting Nevada to additional regulations, despite Nevada having an equally robust GRSG conservation plan. The BLM should develop a method to resolve discrepancies between state level plans.

  Response: In NV/CA planning region, there will be an implementation-level MOU with the State of NV to address any potential inconsistencies between the State of Nevada's adaptive management plan and the BLM's adaptive management framework. This language has been added to the Approved RMP Amendment Adaptive Management section.

- **Comment Summary:** The BLM should establish a process which would resolve discrepancies between state level plans that are not aligned with BLM's management actions, and the Proposed Changes document does not address these shortcomings.

  Response: During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands. Key elements of the BLM adaptive management approach are detailed in the appendix and can be used to assess the applicability of state level plans in meeting BLM management actions,

- **Comment Summary:** Adaptive Management relies heavily on cooperation between state agencies and BLM. BLM should support state agencies and maintain a working and cooperative relationship and ensure that state-led processes are fully integrated into federal decision-making.

  Response: States have ownership over managing GRSG populations and therefore lead the collection of GRSG population monitoring data and determination of population status (e.g., increasing, decreasing, or stable). The States' population monitoring is important for informing effective GRSG habitat management on BLM-administered lands. The BLM is committed to close coordination with states in making management decisions for sage-grouse habitat. Recall that the overall goal of this plan amendment effort as well as many objectives and management actions are explicit in about "coordination and cooperation with state wildlife agencies and appropriate state authorities." During implementation, the BLM encourages states to develop MOUs with their BLM state offices to address any potential points of concern and ensure consistency between State and BLM-managed lands.

10.6 ADEQUACY OF NEPA AND LUP COMPLIANCE

- **Comment Summary:** The BLM did not adhere to agency guidelines, NEPA requirements, or other federal laws when developing the FEIS or during the protest resolution process. The Proposed Changes document does not adequately address these shortcomings.

Response: The BLM has complied with the requirements of NEPA, FLPMA, and its land use planning regulations in developing the approved RMP amendments.

- **Comment Summary:** The Proposed Changes document introduces significant changes to the FEIS that fall outside the scope of the original FEIS analysis and therefore require additional NEPA review. Specifically, the BLM failed to analyze the adaptive management approach in the proposed changes document and that adaptive management approach fails to provide that project level NEPA for changes in management direction will occur. Furthermore, the limited scope of the Proposed Changes comment period did not provide an opportunity to seek clarification on these discrepancies.

  Response: The BLM has carefully reviewed each of the proposed changes to determine if they would result in significant effects outside the range of effects analyzed in the Proposed RMPA/Final Environmental Impact Statement (EIS). The BLM has determined that the analysis described in the Proposed RMPA/Final EIS is inclusive of the effects that would occur because of these changed management actions and supplemental analysis under the National Environmental Policy Act is not needed. Specifically, the proposed adaptive management approach for Idaho, Montana/Dakotas, Nevada/ California and Utah is within the spectrum of alternatives analyzed in the FEIS. The BLM analyzed the proposed adaptive management approach for WY in Alternative 2 of the FEIS. The BLM will also comply with NEPA as appropriate during implementation of the adaptive management approach, as explained in the Adaptive Management Response Section of the Adaptive Management Appendix.

  Moreover, consistent with the BLM's planning regulations (43 CFR 1610.5-1; 43 CFR 1610.2) the BLM provided a 30-day public comment period for the public to comment on significant changes to the proposed amendment that was previously issued in November 2024. In the proposed changes document available to the public, the BLM identified changes and provided an explanation for the changes- including a description of the governor's concerns with the proposed adaptive management approach. The BLM also provided specific changes in management direction associated with the elimination of PHMA with limited exceptions in Table 1 and provided state-specific maps identifying areas where PHMA with limited exceptions is removed to allow the public to compare the proposed changes to those issued in the November 2024 proposed amendment.

10.7 Priority Habitat Management Area and Areas of Critical Environmental Concern

- **Comment Summary:** PHMA with Limited Exceptions was developed as a mechanism to provide protection for GRSG without formally designating ACECs. By removing PHMA with Limited Exceptions, the BLM loses the ability to designate protected habitat for GRSG. Therefore, the BLM should consider either designating additional ACECs or maintaining PHMA with Limited Exceptions.

  Response: The BLM considered areas for potential designation as Areas of Critical Environmental Concern (ACECs) for GRSG habitat in this land use planning process. These areas were first identified through both external nominations and internal rangewide and state-specific review processes that were subsequently thoroughly evaluated by BLM to determine if they met the ACEC relevance and importance criteria identified in 43 CFR 1610.7-2 (refer to Appendix 5, Areas of Critical Environmental Concern for Greater Sage-Grouse Habitat, in the Final EIS). Specifically, in the EIS for this RMP Amendment, in compliance with 43 CFR 1617.7-2 and ACEC policy, the BLM has evaluated the area found to have relevance and importance and proposed the area for ACEC

designation in the Alternatives. The BLM has also analyzed the effects of the management direction to the potential ACEC area under all of the alternatives, including the Proposed RMP Amendment.

Following the Proposed RMP Amendment, several states informed the BLM that they found the identification of and additional protections in the PHMA with limited exceptions to be unnecessary, potentially inconsistent with state and local plans, policies, or programs (including because those states thought there could be confusion as to whether there would be two or three habitat management area designations), and a primary reason the states could not support the Proposed RMP Amendment. In consideration of the states' concerns related to the PHMA areas with limited exceptions, and in order to allow the BLM and the states to move forward together, the BLM has removed the PHMA with limited exception areas in the Approved RMP Amendment.

The BLM evaluated areas proposed for designation as ACECs, and as explained in the ROD, determined the management direction in the approved amendment will provide protection to the relevant and important values of the potential ACEC area thus designation as an ACEC is not necessary.

- **Comment Summary:** The BLM should categorically exclude both wind and utility-scale solar development from PHMA as described in PHMA with limited exceptions, without relying on micro-siting as a form of mitigation. Distributed or co-located solar projects could be considered in non-habitat areas; however, utility-scale projects are incompatible with sage-grouse conservation in core habitats.

  Response: The BLM has carefully considered how to balance multiple uses in the planning area. Utility scale wind and solar are excluded from PHMA, with narrow exception criteria designed to protect sage-grouse habitat from direct and indirect impacts.

10.8 UTAH HMA BOUNDARIES

- **Comment Summary:** The proposed changes to the Utah Habitat Management Area map are detrimental to sage-grouse conservation and could result in the removal of up to 1.6 million acres of GRSG-protected habitat. The impacts of removing this habitat designation were not analyzed in the FEIS and fall outside the scope of the current conservation plan. Additionally, the Proposed Changes document does not provide sufficient analysis or adequate justification for this change. The HMA boundaries should only be revised in a separate Environmental Impact Statement, and the HMA revisions outlined in the Proposed Changes document should be rejected.

  Response: Removing HMA designations does not automatically mean there is a detriment to GRSG conservation. As described in the changes document, the HMA boundaries in the Approved RMP are within the various HMA configurations considered in the range of alternatives and were considered and adopted for specific reasons. The areas removed from HMA are a combination of areas where the BLM has no managerial discretion over the populations (South Slope area in Duchesne County and the Summit/Wasatch County areas), as well as areas where the existing habitat shows minimal to no support of GRSG populations (northern portions of Sheeprocks and Bald Hills areas, and areas south of Highway 40 in Uintah and Grand Counties). In these areas, the combination of lek monitoring, data from bird collars, and local BLM and UDWR on-the-ground knowledge and experience informed these changes. All of these areas were omitted from the HMA designations under Alternative 5 and 6 in the Final EIS. The BLM considered these changes in the EIS and has strong, biologically based rationale to remove GRSG management from these areas.